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REPORT ON MEASURES TO HARMONIZE LIVESTOCK DEVELOPMENT POLICIES IN AFRICA: THE PERFORMANCE OF THE SECTOR AND THE IMPACT OF STRUCTURAL ADJUSTMENT PROGRAMMES

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I. INTRODUCTION

1. The present paper was prepared as part of the work programme of food and agriculture for the 1988-1989 biennium. It constitutes element 2.4 on multinational co-operation on livestock development in Africa and it focuses on the performance of the sector in the face of government intervention and the structural adjustment programmes (SAP). The effect of the SAP on the achievement of increased collective self-sufficiency and self-reliance in animal food production and supply was given particular attention.

2. Africa possesses large livestock resources. In 1987, the total livestock population (cattle, buffaloes, sheep, goats, pigs, camels, horses and chickens) was estimated at 219 million Tropical Livestock Units (TLU), or 117 per cent of the 1978 population. From 1978-1987, the livestock population grew at an annual average rate of 1.6 per cent. In 1987, the total assets value of the sector, estimated at more than $US 55 billion at 1987 prices, could be considered as a net gain since the farm debt and investments made by pastoralists are insignificant.

3. Despite potential self-sufficiency at current per capita consumption rates, the overall annual growth rate in total indigenous meat production of 2.7 per cent over the last decade, was inadequate to offset the effects of population growth. In the context of a continent characterized by a very low intake in animal protein, the amount of production losses and waste at both farm and processing levels, is considerable.

4. Consequently, the dependency on outside suppliers of meat and dairy products has increased. For instance, fresh, chilled and frozen meat imports increased at an average annual rate of 10.9 per cent from 1978-1986.

5. The long-term shortfall in animal food and livestock production has been attributed to several factors, 1/ including the lack of adequate productive economic policies, at both national and subregional levels, which would facilitate the production of high-quality animal food products at least cost, to meet consumer demand for animal products at competitive prices and across national boundaries.

6. The interventionist policies of governments throughout the continent have led to the concentration of basic investments, the supply of inputs and the provision of support services in the public sector which has hampered the socio-economic emancipation of the livestock sector and the development of a self-sustained and self-reliant livestock economy. This has, therefore, limited the integration of livestock economies at both subregional and regional levels. Such dependent policies have also made livestock development dependent on the international community to support and sustain government intervention.

1/ ECA, Report on a survey of agricultural research and programmes for livestock development in the African region, 1987.

7. An assessment of recent livestock development efforts in the continent suggests that the approach to development has been wrong. As a result, there is a tendency, especially at the international level, to put pressure on African Governments to adopt various adjustment programmes. As in the past, however, these programmes unfortunately are drawn up largely by the international community, with minimal consultation with the so-called beneficiaries. Such programmes are often imposed as pre-requisites for new resource flows or for debt rescheduling.

8. The present study recognizes the urgent need for orderly adjustment. Indeed, the optimal exploitation of the huge potential for sustained economic growth and development in the livestock sector in Africa will require courageous and sustained adjustments. These should, however, be carried out with due regard to the special conditions in the sector.

9. As far as possible, the report indicates ways of minimizing the unintentional and undesirable effects of adjustment policies and programmes on livestock sector growth and development. Equally, the report highlights the adjustments necessary for long-term growth and sustained development. The study is directed primarily at policy analysts who by a better understanding of the historical evolution of livestock development can advise decision makers on smooth long-term structural changes based on increasing self-reliance.

II. OVERVIEW OF THE PERFORMANCE OF THE LIVESTOCK SECTOR AND THE DEVELOPMENT ISSUES

10. If livestock development is judged on the basis of any improvement in the living conditions of those dependent on livestock farming, especially pastoralists, or of any increases in the marketing and processing of livestock products and by-products or in the per capita intake in animal proteins, then little has been achieved over the last 30 years. Development has focused on animal and range resources, rather than on the human element and indeed people have often been brought into the livestock projects without consultation or on mandatory basis. As a result, the aspirations of the livestock community at large have been overlooked and their interests ignored.

11. Three phases of government intervention may be distinguished, although there is some overlap between them; minimal intervention before 1960; expansionary intervention from 1960 to 1985; and contractionary intervention since 1985. The three phases will be examined, although most attention will be given to the last, most important phase since it corresponds to the application of SAP.

A. Government intervention before 1960

12. Government intervention was minimal and development was essentially based on indigenous technologies and self-reliance at individual and village levels. Traditional practices and laws provided a code of conduct governing the use of range resources and water, which helped to maintain some balance between carrying capacity and herd population. The present environmental problem, therefore, was not acute.

13. Few technologies were available to develop livestock production especially in the Areas with Comparative Advantage in Breeding (ACAB). Thus, nomadism was an efficient way of using limited pastoral resources and it also gave some protection against losses caused by drought and disease.

14. Nomadism, therefore, was the dominant way of life and accounted for over 80 per cent of the livestock wealth of the continent. Africa was self-sufficient in animal food production and was even a net exporter.

B. Expansionist government intervention: 1960-1985

15. During this period, governments became totally responsible for the development of the livestock sector in Africa regardless of the political options. Indeed, instead of gearing activity towards harnessing and developing human creativity and energy, the people in the livestock sector were assumed to be impediments to progress. This period, therefore, saw the beginning of the destruction of the self-help, self-reliant and independent capability of the livestock community.

16. Foreign aid, channelled through governments, was the basis of all national development; development plans were based on a 90-95 per cent foreign aid component. Decision makers put great faith in foreign experts or were forced to employ them as a condition of the aid package.

17. Several notable benefits resulted from this assistance, for example in manpower growth and skill development, institution building at national, regional and international levels; water provision on public lands; sporadic control of diseases (for example the Joint Programme 15 (JP15) on the eradication of rinderpest and cattle bovine pleuropneumonia); the testing and localized dissemination of technology especially for dairy, poultry and pig production around urban centres and the creation of co-operatives under the umbrella of the local administration or project staff.

18. The negative effects, however, began to be apparent towards the end of the 1970s, especially in the poorer countries and it was realized that the methods and patterns of development were not appropriate. Foreign loans and co-operation in general, together with trade with the developed countries were seen as having disadvantages.

19. Thirty years of development experience in the livestock sector has proved that over-reliance and physical investments based on grants (easy money) does not achieve sustained growth and long-term development, particularly when the investments in facilities and services were made on a piece-meal basis, without the involvement and participation of the people directly concerned in their use and management.

20. During the same period Africa also became a dumping ground for excess production of frozen meat, dairy products and drugs and a trial ground for new products and concepts of development. The people's response was to prefer the products, inputs and services from developed countries to those originating within the continent. Likewise, training facilities overseas were chosen in preference to local ones. As a result, many plants and facilities are underutilized and are the targets of adjustment policies (SAP).

21. The deep-rooted crisis of declining productivity and production from an already low level of productivity in the livestock sector stems from the introduction of development projects and programmes. Leadership in livestock development no longer lies with the livestock community and even the nation, but many different donor agencies intervene in any single country, each with its own concepts, strategies and conditions. The expansionary period began this process of inhibiting the sector from developing on the basis of its inner strength.

22. An additional factor is that drought and locust plagues occur more frequently and over larger areas. The impact of these natural calamities became more acute as the scale of nomadism was reduced because of population pressure and the resulting expansion of agriculture into marginal rangelands. Nomadism is no longer an influence in reducing the effect of drought and disease. Moreover, in some areas, such as West Africa, it has become a source of conflict between neighbouring countries.

23. To the livestock community as a whole, these factors have been translated into the loss and wastage of their assets and into the displacement of population, even to the point of becoming refugees. Unemployment and underemployment among the pastoralists is an increasing problem, especially among women whose income base has been considerably eroded because of the scarcity of fresh milk for sale.

24. African countries realized that something needed to be done to control their own development. In 1980, the Assembly of Heads of State and Government of the Organization of African Unity (OAU) adopted the Lagos Plan of Action. The Plan stressed the virtue of self-reliance which, in concept, should bring back to the African people the responsibility and the control of their own development.

25. The Lagos Plan of Action contains a regional and subregional charter of economic co-operation and integration. It should not be seen as an organ of a centrally controlled bureaucracy based at OAU headquarters with branches in the main economic groupings, rather the subregional headquarters should serve as centres of excellence for decision making to affect significantly the allocation of resources and income throughout the subregion or the continent. Their activities should be orientated towards increasing collective self-sufficiency and self-reliance.

26. There is no doubt that, if the principles of the Lagos Plan of Action are strictly adhered to and translated into action at macro-economic and sectoral levels, then African development will follow. Africa will develop by means of increased individual and collective self-reliance, within the framework of mutually profitable co-operation with the rest of the world.

27. Unfortunately, this expression of political will was not followed by concrete actions and programmes. African economies therefore deteriorated and in 1985, another extraordinary meeting was held which adopted Africa's Priority Programme for Economic Recovery, 1986-1990 (APPER). This was followed by a special session of the United Nations General Assembly on the economic conditions of Africa at which an agreement by the rest of the world to support Africa effectively was negotiated. In particular, the

international community committed itself to helping African Governments to develop the priority agricultural sector, including livestock, within the framework of the United Nations Programme of Action for African Economic Recovery and Development, 1986-1990 (UN-PAAERD).

28. While attempting to make structural changes of the overall economy, however, the issues of livestock development have again been confused by the imposition of SAP. The adoption of SAP is often a pre-condition for any funding request to be examined by the developed countries, even within the framework of the UN-PAAERD. In some cases, the continuation of the old aid programme was linked to the successful completion of negotiations with the International Monetary Fund (IMF). Indeed, the implementation of APPER coincided with the debt crisis and the desire of the international community to initiate reforms in Africa enabling the repayment of debts and the maintenance of the absorptive capacity for imported manufactured goods, so that the overall efforts of African Governments and people to implement APPER have been hampered.

29. As a result, the policies and measures which followed were often in conflict, with too many pre-conditions being enforced. In the livestock sector, therefore, if the drawbacks of current programmes and policies are not corrected now, the coming decade may again be marked by retarded growth and underdevelopment.

III. STRUCTURAL ADJUSTMENT AND THE LIVESTOCK SECTOR

30. Since APPER and SAP are both crisis measures, they should reinforce each other but in fact, because the plans were designed under different circumstances, they seem to conflict. The recommendations of SAP tend to jeopardize the prospects for economic recovery, which is the goal of APPER.

31. This study fully recognizes the need to adjust the major economic imbalances, so that countries live within their resources and cease to rely on the international community for all aspects of socio-cultural and economic development. Adjustments must necessarily consider the social aspects and prepare the ground for sustained and long-term development and growth.

32. There are several weaknesses of SAP including shortcomings in the theory of structural adjustment, the lack of analytical tools to assess the likely impact of various policy instruments and the emergency, short-term nature of the programmes. Above all, the data and information on which programme design and monitoring is based is inadequate in quality, quantity and coverage. For instance, the extensive use of the gross domestic product (GDP), a hypothetical measurement, has undermined the efficiency of SAP. In addition, too much emphasis is put on price incentive, while neglecting the social and institutional structures, public investments in rural infrastructures and technological development.

33. Although the available information is too scanty for an effective assessment of the impact of SAP on the livestock sector, the present evidence suggests that current programmes adversely affect the prospects for growth and long-term development of the sector. Most programme elements of SAP seem to result in restricted rather than expansionary growth in the sector.

A. The effects of SAP on the livestock sector

34. Since the prime focus of SAP has been to influence macro-economic equilibrium, the effects on the livestock sector have been largely indirect. Further recent programmes have coincided with widespread rinderpest in the continent and with a loss of interest by the international community in the sector.

(a) The effects of adjustment in public expenditure

35. The adjustment packages based on cuts in public (governmental) expenditures were not successful in encouraging growth and development. As stated before, this policy combined with the crisis in foreign debt often led to a contraction in the livestock industry, with the result that increasing numbers of people dependent on livestock became poorer and more reliant on food aid, etc.

36. The indiscriminate reduction of government expenditure caused a decline in the volume and quality of public services. In terms of the livestock sector, this is particularly true of animal health and extension services. Furthermore, the responsibility has not been transferred on to the private sector to fill the vacuum.

37. The adjustments were not made at the farmer level for them to take control of the key inputs, services and other resources required in the production process, nor were they briefed on the inability of governments to meet their commitments for the delivery of goods and services.

38. The private sector was constrained notably by the lack of financial resources. The inadequacy of the market has hampered its growth, since the majority of the potential clients are the pastoralists in remote and harsh areas who have no incentive to use irregular, thus risky, services.

39. Cuts in public expenditure have also resulted in a reduction in the number of public sector employees. This has resulted in a reduction of the urban purchasing power which has considerably reduced the demand for meat, a luxury commodity. Consequently, the livestock community, especially the middlemen and butchers, have experienced further deterioration in their standard of living and the activities and income of public slaughterhouses have been reduced. The resulting excess capacity may become the target of further SAP measures.

(b) Effects of adjustment in monetary policies

40. Following the introduction of the Second-tier Foreign Exchange Market (SFEM) by Nigeria, prices rose sharply. The terms of exchange between the naira (the Nigerian currency unit) and the FCFA (used in most countries of the subregion and including those which are exporters of live animals to Nigeria) also deteriorated. As a result, in spite of rises in meat prices, the volume of exports of livestock from the Sahel to Nigeria has fallen. The import of manufactured goods, whether local or imported from Nigeria to the Sahel, has also been reduced, since trade is no longer attractive.

41. These factors had a negative influence on the wellbeing of the population, because of a reduction in the consumption of meat, consumer goods and services. The import of consumer goods - from toilet papers to sophisticated electronic equipment and cars - is very important in volume and value.

(c) The effects of adjustment on trade

42. The trade liberalization measures advocated by the SAP have resulted in increases in the imports of frozen and chilled meat. Very often, these products were originally exported to African countries at very low prices, although the local animal resources exist to meet consumer demand. For instance, a kilogramme of bovine meat which costs over FCFA 1,100 at the farm gate in the European Economic Community (EEC), is sold for about FCFA 150 to importers in Africa and costs less than FCFA 300 (cost, insurance and freight paid - c.i.f.) in Dakar, Senegal. Locally produced meat should be sold at a minimum of FCFA 500 per kg to cover production costs and ensure a reasonable margin. 2/ Such imports can only be detrimental to the promotion of intensive production and will increase the impoverishment of the traditional producers, part-time and newcomer farmers.

43. Furthermore, the continent has become increasingly dependent on outside sources for meat whereas it was a net exporter only a decade ago. Intra-African trade has been reduced and the balance of trade in animal products and by-products and the overall balance of payments has deteriorated. Cheap imports also mitigate against all prospects of increased individual and collective self-sufficiency in animal food production and supply and the contribution of the sector to economic integration. While a handful of national importers and domestic consumers have benefited from this operation, society as a whole has incurred considerable losses and wastage. The effects will continue long after the imports have been stopped.

44. It should be realized that without the use of trade distortions and in the absence of any desire by the developed countries to disrupt the livestock industry in Africa, these imports of frozen meat are not economically or financially sustainable. The continued availability of meat at such subsidized prices depends on the outcome of the struggle between the livestock farmers and the legislative bodies of the developed countries, for example in the EEC, which is actively engaged in structural reforms including a reorientation of agricultural policy to achieve a closer match between supply and demand. This would have the effect of reducing aid to agriculture, so that prices would rise to realistic levels and as a result food products, including animal food, would become unattractive to African importers since they would be more expensive than local produce.

(d) The effects on the livestock sector of projects and policies to lessen the overall social cost of SAP

45. The measures to offset the social cost of SAP, especially the redeployment of public employees, poses a serious threat to the welfare

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2/ Ministère du développement rural/Ministère chargé des ressources animales, Plan d'action pour l'élevage, Sénégal, 1989.

of the traditional pastoralists, who depend solely on livestock farming. The livestock sector has been identified as a source for productive employment around the urban areas, through the intensive production of milk and meat. Entry to and exit from these activities is easy, for example in the backyard fattening of lean animals over three-month periods using agro-industrial by-products.

46. It is fully recognized that an orderly and well-integrated production system, in which the Zones with Comparative Advantage in Breeding (ZCIBs) supply livestock units to the Areas with Comparative Advantage in Cropping (ACACs) and in Intensive Production (ACAIPs), would benefit all agricultural sectors, including the livestock economy. The sudden and disorganized entry of new producers into the system, however, has caused hardship to the pastoralists, particularly by reducing the profitability of livestock enterprises in ACAIPs because of competition for a very limited market. The situation has been exacerbated by the reduction in the volume of meat and live animal exports, resulting from the effects of trade liberalization policies.

47. These effects have been felt more keenly in countries with significant numbers of established part-time livestock farmers. Many of these are the political elite and high-ranking officials who have privileged access to scarce commodities and services. Thus, they are able to bar those seeking redeployment in the sector, who tend to lack collateral against credit and whose separation payments are inadequate to finance viable enterprises in such an environment of unfair competition. They also compete unfairly with the traditional producers.

48. Thus, redeployment of labour under SAP is hampered and the social costs of SAP are increased, not only to the target group but also for the pastoralists.

49. A potential problem related to the development of these part-time operators concerns the health aspects, for the uncontrolled use of drugs and feed additives to produce animal-derived food products could give rise to health hazards because of the risk of contamination from food and drug residues. Regulations governing the control and safe use of drugs and additives are difficult to enforce because of a lack of means to carry out inspection of the possible potential influence of many of the part-time farmers.

2. The case of direct structural adjustment involving the livestock sector

50. The most significant case, at least at regional level, of the direct application of SAP to the sector was during the Pan-African Rinderpest Campaign (PARC) in early 1980. The request of individual countries and the OAU for international aid to eradicate rinderpest was not well received and agreement was subject to conditions on structural adjustments in the sector, especially within the animal health services.

51. Lengthy negotiations over more than six years, on the terms and conditions of agreement between the continent and prospective donors, finally resulted in the Pan-African Rinderpest Campaign, under the umbrella of the OAU and the EEC. The programme provides for immediate control measures in the countries worst affected, namely Burkina Faso, Ethiopia, Mali, Nigeria

and the Sudan. The continuation of the programme beyond the initial two years will be approved only if the countries successfully carried out the reforms.

52. Other countries, notably Benin, Burundi, Côte d'Ivoire, Djibouti, Ghana, Guinea-Bissau, Kenya, the Niger, Sierra Leone, Somalia, the United Republic of Tanzania, Togo and Uganda will be covered if the development of the disease merits it by bilateral agreement between the EEC and the individual country concerned. Thus, only five countries will be directly covered with most of the others remaining at risk so that overall influence of the programme on reducing the impact of rinderpest on the livestock economy seems questionable.

53. The programme budget financed under the European Development Fund (EDF), was 50 million European Currency Units (ECU). Fifty per cent of this was set aside for the second group of countries, depending on the outcome of the negotiations. 3/ Although the financing agreement was signed with the OAU's Inter-African Bureau for Animal Resources (OAU/IBAR), the funds allocated to the field operations will be made available only when implementing protocols are signed with each country. This severely affects the regional dimension of the programme.

54. The dialogue focuses mainly on the measures to be taken to improve livestock policies, to provide a better financial basis for livestock services and to prevent desertification. The Commission will only release funds when the authorities concerned have accepted and implemented the adjustments implicit in the EEC guidelines.

55. The issues included in the dialogue and the actions related to increasing regional awareness of the need for shared responsibility and solidarity are listed below: 4/

(a) The place and contribution of livestock production in the country's economic, ecological and social background;

(b) The possibility of introducing a system of payment for services rendered or of increasing the cost of some services to cover the cost of key services which remain free of charge;

(c) A possible annual flat rate contribution, based on the numbers of livestock, in return for the provision of free services;

(d) Encouraging the formation of associations by livestock producers;

(e) The imposition of a tax on imports of livestock products and the allocation of the proceeds to livestock services;

3/ EEC 1986. Financing Agreement between the European Economic Community and the Organization of African Unity, Agreement No. 3559/PR VII/29 1/86-EN.

4/ Ibid.

(f) The allocation of the proceeds of existing taxes on livestock production to finance the services;

(g) A better balance between the numbers of staff (particularly graduates) employed in livestock services and the actual requirements of the producers. This could be achieved perhaps by offering incentives for staff to move into the private sector;

(h) Better preventative and control measures over desertification.

56. Although worded differently, these conditions are not essentially different in substance from those imposed by the IMF/World Bank. The Pan-African Rinderpest Campaign is in essence a structural adjustment programme specifically devised for the livestock sector by the EEC. While negotiations and dialogue are under way, the disease continues to cause loss and wastage in the cattle subsector. Undoubtedly, this has contributed to limiting the access of African meat to traditional and commercial markets, especially in the Middle East (ban of exports). It has also provided more opportunities for expanding the export of frozen meat, particularly from the EEC.

3. Simulation of adjustment in the terms of exchange between the livestock sector and the rest of the economy

57. It is common in SAP to have a component for influencing the terms of exchange between the agricultural sector and the rest of the economy. The present scenario assumes that government control on prices would be lifted to improve the terms of exchange between the livestock sector and the rest of the economy. The effects of such a policy on the nomadic pastoralists and the weaker segment of new livestock farmers would be minimal, for they would be constrained by the trade liberalization policy and the reduction in purchasing power of urban consumers.

58. The desired goal of an increase of production for domestic consumption and/or for export would not be achieved. The nomadic pastoralist has a limited demand for cash to meet necessary expenditures. 5/ The demand for consumer goods is also limited because of nomadism and the costs of transporting goods to remote areas is extremely high, apart from the low turnover of capital. In the absence of permanent secure land tenure, investment is almost nil in livestock farming, and therefore, the demand for capital investment funds is almost non-existent. In consequence, the off-take of animals from a pastoral farm is also limited.

59. A liberalization of the price of meat at consumer level would probably benefit the butchers and the middlemen in the short run. Transmitted to farm level, however, by an increase in farm gate prices, it might lead to a reduction of the supply of slaughter animals. The volume of business in the meat market and the quantity supplied to consumers would then be reduced. This in turn would result in an increase in the price. The spiral would continue until equilibrium is reached.

5/ ECA, Comprehensive policies and programmes for livestock development in Africa, Volume I: Problems, constraints and necessary future action, 1985.

60. The result of this could be a decline in the per capita intake of animal protein, especially for the poorest, most vulnerable urban consumers (the elderly, women and children). In turn, this would add to the effects of the deterioration in purchasing power resulting from the application of SAP. Moreover, this would increase the pressure on an already fragile resource base, thus making society at large worse off.

B. Recovery, rehabilitation and long-term growth and development of the livestock sector: the required and desirable adjustments

61. Livestock has considerable potential to develop from its inner strength. With a few well co-ordinated, integrated adjustment programmes at national and regional levels, the sector could generate the resources, including foreign exchange, necessary to finance its rehabilitation and recovery. This would be possible through an increased off-take of animals for final consumption, leading to an increase in the volume of production and export of meat and by-products, especially hides and skins. A reduction of the huge losses and wastage, especially in the slaughterhouse and in the cattle subsector, would increase the self-financing ability of the sector.

62. Preliminary adjustments are necessary, however, to correct major imbalances, for instance, the biased role and responsibility for development of the public sector should be changed to a genuine sharing between the public and the private sectors. Secondly, the over-reliance of the livestock community or government and of the state and region on the international community should be corrected by promoting the concept of self-reliance and by transferring the effective leadership and responsibility for African development into African hands.

63. Thirdly, the neglect in the allocation of public funds, services and resources should be effectively redressed and economic management improved, including greater discipline and efficiency in the use of resources. Consumers should be encouraged to prefer locally (domestic or subregional) produced goods and services rather than those from overseas. Regional ties should be developed in preference to international links. These are issues to be resolved urgently, in order to secure profound lasting adjustments and not stop-gap measures.

64. These adjustments should ensure the efficient allocation and use of all resources, natural, human and animal and the development of markets, especially for services, capital commodities and labour, with a clear division of function between the public and private sectors. In particular, they should prepare the way for greater control over the production system by lessening production risks and should ensure efficient institutions at all levels to help stimulate growth and development and achieve equity in the distribution of income and welfare.

65. Reforms directed towards improving the efficiency of the public sector, including the restructuring of enterprises and the closure of those not essential for growth, development and the satisfaction of social welfare and equity objectives, should be pursued vigorously. Since very few parastatals exist in the livestock sector (diagnostic laboratories, slaughterhouses, pharmacies and plants for the production of drugs and vaccines and the processing of meat and by-products), this restructuring should cause only minimal social and political upheaval.

66. Public investment should concentrate on major aspects, such as infrastructure development, road construction, research and extension, but without being the exclusive responsibility of the state. In fact, the financing of public investments could be drawn mainly from the sector's own resources including taxes and special levies on the beneficiaries. Joint ventures between the public sectors of member States would be ideal for achieving economies of scale.

67. The progressive privatization of the distribution and delivery of inputs and services especially at farm level and the introduction of user charges at all levels should be instituted. The liberalization of the credit markets lending on soft terms and the development of insurance schemes to facilitate credit access for private entrepreneurs and farmers and to protect their assets should be part of the adjustment programmes. These measures would encourage the development of a viable private sector and the adoption of improved technologies.

68. The administrative requirements for exporting livestock products are often such that it is better to avoid the official export channels. Indeed, it seems that the civil servants are not interested in honesty and the lawful operations of the livestock industry.

69. As a result, physical loss and waste during the export of live animals is increased. The government also loses revenue from taxes and society loses an opportunity to develop and reap the maximum benefit from its livestock resources. The adjustment process must, therefore, take effective measures against this malpractice.

70. There is an urgent need to amend the trade policy on livestock products, by-products and agro-industrial by-products, in particular to limit the export of agro-industrial by-products for feed production. Export taxes on livestock products and by-products should be reduced, as should the import taxes on major essential livestock inputs.

71. The subsidies on products of animal origin should be progressively reduced and taxes and quotas applied to imported livestock inputs and the products and related products produced from them locally. In particular, the import of frozen meat at dumping prices should be heavily taxed or banned. Part of the proceeds from taxation could be used to finance public intervention in the sector, especially in pastoral zones (research, extension, training and some animal health activities).

72. Monetary policies should be revised to stimulate the development of intra-African trade in livestock and enhance the contribution of the sector to the integration process at both subregional and regional levels. In particular, the clearing houses within the various economic groupings should be effectively used.

73. Other adjustments should be directed towards the improvement of the terms of exchange between the livestock sector and the overall economy. Three specific adjustments would be beneficial: security of tenure on pastoral lands should be guaranteed by granting pastoralists the same rights as for cash crop growers and peri-urban livestock farmers. In many countries,

livestock producers have been pushed increasingly onto marginal lands. This is an essential step for the recovery and long-term growth of the sector.

74. Although the issue is politically sensitive, the costs of guaranteeing land tenure now would be less than waiting until the reforms become inevitable. Pastoral lands are currently often publicly owned and exploited, so that the adjustment is a policy issue rather than one affecting a given political or social interest group.

75. Land reform, however, might stimulate or cause the formulation of interest or economic groups in the livestock community, leading to political involvement in a broad range of issues affecting the industry. Some equity problems could arise in the distribution of land, especially at the expense of the small holders and inefficient producers, but some compensatory measures could be taken to achieve equity through appropriate taxation and to create jobs for those displaced.

76. Overall, the benefits would outweigh the losses. The adjustment would facilitate the commercialization of livestock, increased prosperity, greater participation by the pastoralists in their own development and a greater opportunity for the private sector to supply the complementary inputs, supporting services and essential consumer goods and services at minimal cost as needed. Employment opportunities would also be created, contributing to the reversal of rural-urban migration. Finally, the advocated reform in land tenure would lead to the optimal allocation of resources for greater economic efficiency and optimal social welfare.

77. Secondly, an adjustment should be made in the prices of meat and major agro-industrial by-products required in feed production. The implicit taxation of the livestock sector, by pegging the meat prices at levels which do not cover production costs and drives the butcher out of business or onto the black market does not help the consumer, the butcher or the producer. Pricing reform is, therefore, necessary, but it must be allied to land tenure reform.

78. Thirdly, a correction should be made in the transfer of financial resources from livestock to other sectors. A very insignificant proportion of the income and taxes generated from the sector is reinvested into it. The allocation of resources for research and extension should be revised since livestock can still yield considerable resources for a low injection of public funds. The ultimate goal is to increase the contribution of the sector to socio-economic emancipation, hence the constant need to increase production.

79. Such adjustments could put the sector on the path of self-sustained and long-term growth and development, so making a significant contribution to overall socio-economic development in the continent. Ultimately, the growth in the balance of trade in livestock products and by-products would contribute to the improvement of the other macro-economic indicators. The sector would have played an important role in the success of SAP and could even serve as a model.

80. During the adjustments, however, attention must be paid to minimizing the negative effects on the poor producers and consumers. A genuine take-

off between contradictory policies, especially at the macro-economic level, should be carried out. These are the essence of the challenge, if the sector is to contribute to the achievement of the goals set out in the Lagos Plan of Action and APPER.

81. In the short term, governments may see the adjustments as reducing public earnings. The eventual increase in the volume of production and exports, especially in the major livestock-producing countries, however, should cover the loss of revenue resulting from the lowering of taxes. Since the value added for producers and traders would improve, a greater volume of income tax would be generated, at the same level of tax per unit.

82. Moreover, these reforms should lead to increased exports on the free markets. Thus, the reliance on stabilization schemes funded on external resources, such as the export earnings stabilization system (STABEX) under the Lome Convention, would decrease to minimal levels or be dropped. At present, few African countries export meat to the EEC, supposedly because of regulations on diseases, notably rinderpest, and those that are allowed to export can rarely fill their quotas.

83. Africa should be seen to pursue and intensify its efforts to implement its recovery and rehabilitation programme within APPER. In addition, the reforms in macro-economic policies to be initiated and controlled by individual governments should be pursued.

84. There are signs, from recent events in several member States, that political expediency and palliative measures and programmes, which admittedly bring temporary relief, are seen as being increasingly less effective as substitutes for basic and deep-rooted reforms. External factors will also help to increase African consciousness. Europe is moving towards a single market and currency by 1993; Canada and the United States have agreed on a single market; the commercial banks after making a breakthrough in China are vigorously opening up investment markets in the Eastern Bloc, particularly in the USSR. These will undoubtedly lead to a diversion of financial resources away from the weakest continent, Africa.

85. Indeed, these activities in the developed countries should force African Governments to fulfil their commitments within the framework of the Lagos Plan of Action. Meanwhile, it is urgent that the goal of increased food self-sufficiency be pursued effectively as cheap and free food will be less available. Furthermore, it is likely that STABEX will no longer be as efficacious if it continues beyond 1991.

IV. CONCLUSIONS AND RECOMMENDATIONS: LOOKING TO THE FUTURE

86. It has been seen that the pastoralist is at a disadvantage, paying taxes on assets but having no say in public policy making and intervention. The problem of livestock development was identified, formulated and exposed to the international community for possible solution, on behalf of the potential beneficiaries but without their prior knowledge and consent. Their participation in the solutions to the problem was not assured, for the development process was often irrelevant to them and indeed was often unfair to the inhabitants of pastoral lands.

87. To make matters worse, governments in many countries took over the rights on pastoral lands by decree which affected adversely the ability of the pastoralists to control production and the use of the water and range resources that are scarce in the fragile environment of arid zones. No rational member of the community would invest in or protect these public utilities over which he has no rights.

88. The approach to development over the last 30 years, including recent attempts at adjustment, has not been successful. Indeed, the livestock sector, especially in the pastoral areas, is in a period of crisis, suffering from high welfare costs; falling opportunities for employment and investment because of widespread drought and diseases; the decline of subregional co-operation, especially in the free movement of animals and their owners across national boundaries, in search of forage and water; unfair competition from importers of frozen meat at dumping prices, and reduced demand for meat, due to the reduction in purchasing power resulting from austerity measures and general recession.

89. As a result, the crisis has reached such proportions that most countries are increasingly unable to control production and maintain productivity in the livestock industry. Some are unable to sustain earlier progress in animal health, production and the development of water points and range resources. Corrective measures are urgently needed within a well- and carefully planned framework of interventions. The most pressing questions facing the livestock industry, however, are not in production technologies, but in policy areas.

90. The contention of this study is that present reforms under SAP and based on existing foundations simply aggravate the situation. They can provide only temporary relief rather than lasting solution to African livestock development problems.

91. The collective and individual responsibility is to ensure that development is effective and is based on measures of increased individual national and collective self-reliance, socio-economic self-sustainment, regional integration of livestock economies and harmonization with other aspects of the economy.

92. For economic integration to be successful, however, it should be progressive and based on a rational mix of mutually profitable co-operation and solidarity. Solidarity in the livestock sector, should help to preserve the comparative advantage of member States with high potential in livestock. Greater livestock growth and development should be ensured through collective measures and programmes, including the introduction of protectionist policies for the benefit of the whole. Opportunities to develop the sector within the framework of the subregional groupings should be fully exploited.

93. Developing opportunities for subregional co-operation, however, should not be a substitute to national self-reliance, nor international co-operation a substitute to collective self-reliance. Equally, state intervention should not hamper development of self-reliance and self-help among communities and individuals. Rather, all these opportunities should be developed and furthered in a system-wide framework for the benefit of all parties concerned.

94. The effective and courageous translation of the principles of the Lagos Plan of Action to the livestock sector should begin, hopefully, before the end of APPER and should include:

(a) The reform of pastoral land tenure;

(b) The development of the private sector in the livestock industry, including veterinary medicine;

(c) The development of complementarity and integration of production within the state, subregion and region and the development of subregional markets primarily for community production of both inputs and outputs.

95. Changes in attitudes towards development are advocated, in particular in the responsibility for the initiation, timing, path, location, focus, coverage and funding of development programmes. The need to move away from over-reliance on the international community towards self-reliance and to build up self-confidence is essential. The members of the livestock community must become the initiators of their own development and growth and should be responsible for the definition and the resolution of the socio-economic problems affecting them. The study, therefore, emphasizes the need to create an enabling environment, for the livestock sector to be taken as a business enterprise, harnessing the self-help, self-reliant and independent capability of the producers and businessmen.

96. The successful initiation and implementation of such changes will, however, require a well-defined framework for short- and medium-term adjustment, rehabilitation and recovery and also with the sustained and long-term growth and development needs of the sector.

97. It is recommended that over the next two years, ECA, in close collaboration with FAO and OAU, should undertake the preparation of a framework for interventions in the African livestock sector, along the lines defined in this report, to ensure the long-term growth and development of the sector. In the meantime, assistance should be given to member States to minimize the negative impact of SAP on the sector, through adequate advisory services and in reducing and controlling production losses and wastage at farm and processing levels, by the preparation and implementation of a master plan for the prevention, reduction and elimination of losses and waste.

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REPORT ON NON-CONVENTIONAL FOOD RESOURCES IN AFRICA

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I. INTRODUCTION

1. The main problem facing most African States is how to attain food self-sufficiency. This objective has been set forth in the economic and social development plans of all countries in the region and accorded top priority. And yet numerous surveys conducted on the world food situation have all come up with the sad realization that hunger and famine continue to plague many parts of the world. Millions of human beings do not have enough food and a still more substantial number cannot secure the food they need to maintain their health.

2. The FAO food survey conducted in 1985 revealed that food availability per inhabitant, when calculated in energy intake, increased by about 9 per cent in 14 years from 2,450 to 2,665 K/calory/day from 1969-1971 to 1983-1985. However, the gap between the developed and developing countries is considerable as are disparities within the same region. In sub-Saharan Africa, for example, per capita food availability has been stagnating for 15 years from 2,097 K/calories/day in 1968-1971 to 2,051 K/calories/day in 1983-1985 while the countries of North Africa as a whole recorded an increase of about 32 per cent over the same period.

3. The fifth FAO survey on nutrition also revealed that the average inhabitant of the least developed countries (LDCs) could, from 1979 to 1981, secure not more than one-third of the food available to the average inhabitant of the developed countries. Among the regions of the third world, Africa recorded the slowest growth rate in per capita food energy availability. This was noted principally in those countries where the available food was already insufficient. Most of them also happened to be low incomes countries.

4. The possible causes of the deteriorating food situation in Africa are many and complex. Among the factors generally blamed are drought, floods, the world economic crisis, unsuitable agricultural policies and population pressure. However, there is one inescapable realit: the food policies pursued in a good number of the countries most often go against the interest of local producers and consequently block, in some measure, the development of local food production while promoting the importation of food items.

5. Such serious food shortages have, in all the countries affected, created widespread malnutrition and even famine. The causes of malnutrition are complex and multi-faceted and bring into play a certain number of socio-economic, cultural and environmental factors whose relative importance is not always easy to determine.

6. Malnutrition does not have the same impact on all population groups. The most affected are the poorest who lack the resources to procure adequate food. Even within such groups, women and children, because they are the most vulnerable members of the family, suffer most seriously from the situation.

7. However, malnutrition is not a question of poverty alone because while not all the poor suffer from malnutrition, certain socially advanced groups are often confronted with nutritional problems arising from over-feeding

or poorly balanced diets. This is especially true of the major towns where imported foods abound and the better-off classes of people tend to consume prestige foods which are expensive into the bargain but not necessarily nourishing.

8. Cultural behaviour in matters of food, ignorance about the quality and nutritive value of foods, access to food resources and many other socio-cultural variables constitute so many factors that contribute to malnutrition.

9. In the face of such a virtually permanent food crisis which is at times worsened by adverse climatic conditions, African States have intensified and combined their efforts, with the help of international concerns, to reverse the downward trend of per capita food production. Structural reforms, new policy shifts and strategies for agricultural development have been envisaged and measures taken variously to address the problem in the short, medium and long terms.

10. More immediately, food deficits were covered by imports, complemented with food aid received essentially from Western countries in the form of cereal and cereal by-products.

11. The countries of the region have also become aware that while food aid is indispensable and necessary for emergency situations, it could become an impediment to the promotion of local food production. Indeed, the availability of food products provided as foreign aid and sold at subsidized prices has made large segements of the population to become dependent on such imported cereals as wheat and rice and at the same time led to gradual changes in food preferences to the detriment of local foods.

12. It is normal and justified for people to try to replace in part the starchy food with cereals and this is even desirable in order to have a balanced diet. However, this change in food habit should, to the extent feasible, be linked to specific programmes for growing those cereals in the countries concerned. Obviously, trade flows resulting from food deficits must be kept to the barest minimum if the countries are to develop economically.

13. It is within this context and in consideration, among other things, of the limitations for producing certain food items that the Economic Commission for Africa introduced into its work programme for the 1988-1989 biennum an element on non-conventional food resources.

14. The list of African food products that could be defined as non-coventional for the purposes of this report would be too long and this is not the purpose of this report. The nature of such foods may vary from country to country, from one geographical region to another and from one tribe to another depending on the socio-cultural and agro-ecological conditions prevailing. They may include plants cultivated or those gathered in their natural state and such insects as are gathered (termites, caterpillars, grasshoppers) or such wild animals as gazelles, antilopes and elephants.

15. Certain foods may not be consumed for a number of reasons that may be economical, cultural, psychological, sociological or religious. All these should be taken into account when planning and pursuing food strategies. It is often said that food habits are difficult to change particularly when considering the cultural and symbolic values attached to the particular food. The prohibition of certain types of food product will also require further in-depth study.

16. The purpose of this report is therefore to draw attention to the variety and wealth of food resources with which Africa is naturally endowed but which are usually little used by the people either because they are ignorant of them or choose not to eat them. Emphasis will be placed on the economic and nutritional importance of such foods, the energy, protein, vitamins and minerals they can provide particularly during the lean season when food intake is at its lowest. Furthermore, the introduction of many types of food that are gathered, picked or hunted and which are normally considered non-conventional would lead to making better use of local resources and contribute not only to raising nutritional standards for people but also provide work for a large number of them.

17. This report is addressed in particular to agricultural planners and policy makers and underscores the crucial role that such food items can play in the fight against hunger and malnutrition and, consequently, the need for them to be reflected in food and nutritional policies and strategies.

18. It has been prepared essentially from data and information collected in the course of missions undertaken to four countries of Central Africa, namely Cameroon, the Central African Republic, the Congo and Sao Tome and Principe. The purpose is to educate and to inform but while its scope is fairly limited, the fundamental principles underpinning this study as well as the conclusions and recommendations emerging from it could equally be applied to other African subregions.

19. Finally, to all intents and purposes, the time has come for African integration and economic co-operation and it would be more than advisable to provide a subregional basis for every activity, project or research programme in this area.

CHAPTER I
ANALYSIS OF THE FOOD AND NUTRITIONAL SITUATION IN THE CENTRAL AFRICAN SUBREGION

General economic data

20. The Central African subregion considered in this study includes countries members of the Multinational Programming and Operational Centre (MULPOC) based in Yaounde. They are Cameroon, the Central African Republic, the Congo, Gabon, Equatorial Guinea, Chad and Sao Tome and Principe.

21. The main characteristics of the subregion are, on the one hand, the vast potential which exists both in agriculture and mining and on the other hand, its heavy dependence on the outside world to meet food requirements.

22. Revenue from mineral resources including petroleum in Gabon, the Congo and Cameroon, diamonds and gold in the Central African Republic, together with revenue from the export of such agricultural products as coffee, cocoa, cotton, tobacco and timber enable some countries of the subregion to have one of the highest standards of living in Africa.

23. What is more, such dependency is rendered fragile and precarious by the irregular nature of trade channels and fluctuations in international commodity prices.

24. In Sao Tome and Principe, the economy is strongly dominated by cash crops like cocoa which accounts for more than 72 per cent of the productive land. In contrast, 60 per cent of the food calorie intake has to be imported.

25. In Gabon, the mining sector (manganese and uranium) contributed 30 per cent of GDP in 1970. Currently, petroleum has become the dominant export contributing about 40 per cent of GDP. Timber resources are also very important in Gabon.

26. In the Central African Republic coffee, cotton and timber accounted in 1982-1984 for about 60 per cent of national exports evaluated at $US 64.8 million while diamonds alone accounted during the same period for 25.2 per cent of total exports. In 1986, rough diamond output was estimated at 357,300 carats while cut diamonds were estimated at 2,500 carats.

Agriculture and food situation in the Central African subregion

Production and consumption

27. In the subregion, there coexist two completely different agricultural sectors which in many cases, are not closely interlinked. On one side are cashcrops meant for export and which generally become the purpose of major development projects and on the other side is the food sector which caters essentially for domestic consumption which is allocated an infinitessimal share of national investment in agriculture.

28. In the Congo, the peasant farming sector cultivates nearly 70 per cent of the land and provides the bulk of food products but is allocated only 10 per cent of state investment in agriculture.

29. In the Central African Republic, the traditional farming sector makes a crucial contribution to national food production but appears to be disfavoured in terms of investment.

30. In Gabon, agricutural production is still the responsibility of the traditional sector where farming practices have not much evolved over the centuries, hoes being the main implement used.

31. As to Sao Tome and Principe, food is produced on the one hand by state agricultural enterprises (roças) which use 29 per cent of the land put under

food crops and, on the other hand, by the private sector made up of small farmers and plantation owners and using a total land area of 3,900 ha.

Table 1: Major food products in the countries of the Central African subregion

Average production from 1984 to 1988 (in thousands of tons)

	Cameroon	Central African Republic	Congo	Equatorial Guinea	Gabon	Sao Tome and Principe	Chad	Total sub-regional
Paddy rice	112	11	2.5	1	-	-	13.8	140.3
Maize	369.2	48.8	7.8	10	-	-	36.8	472.6
Millet	395.4	55.4	-	-	-	-	487.6	938.4
Total cereal	876.6	115.2	10.4	11	-	-	538.2	1 551.4
Cassava	670	579.4	618	254.6	55.2	3.8	297.4	2 478.4
Cocoyam	-	58.6	-	56.6	-	-	8.8	124
Potatoes	169.6	-	2	-	-	-	13.8	185.4
Sweet potatoes	144.4	-	13.8	1.4	35.4	-	40	235
Yams	397	198.6	14.4	86	-	-	219.2	915.2
Plantains	1 006	65	64.4	171.4	-	-	-	1 306.8
Total roots and tubers	2 387	901.6	712.6	570	90.6	3.8	579.2	5 244.8
Total pulses	122.8	6	7.4	-	-	-	58.6	194.8
Total meat	107.8	62.4	15.6	22	-	-	65.6	273.4
Total milk	47.6	4.8	3	0.6	-	-	152	2208
Palm oil	91.2	2	15.6	3.8	5	-	-	112.6

Source: FAO 1988, Production Computer Print-outs - Statistics Division 25 November 1988, Rome.

32. Food habits are determined by a number of cultural, agro-ecological, socio-economic and psycho-sociological factors. These are in principle imposed by the natural environment, the social group and have to do with consumer tastes, preferences and the types of food available.

33. The introduction of new food items as a result of importation to offset national production deficits has somewhat disrupted the food habits of people in Africa. Consequently, there is a transition taking place in the food consumption pattern of African people, particularly of the well-off classes in the major towns.

34. There are wide differences in consumption patterns not only from one region to another, between the countryside and the towns but also between one social stratum and another in the towns. The urban pattern shows a high consumption rate of industrial products, livestock meat, cereals and other

imported food to the detriment of traditional staples. In contrast, the consumption pattern in the rural areas where the economy is essentially one of subsistence, has remained traditional and highly dependent on starchy foods and food collected, gathered or hunted. However, in spite of such heterogenity in food consumption patterns, it can be said that on the whole, the staple foods of the subregion are starchy with cassava dominating.

35. In the Central African Republic, nearly two-thirds of the food energy intake comes from roots, tubers and plantains with cassava accounting for the lion's share. Cassava is mainly used in the form of flour for preparing "balls" which can also be made from fresh tubers boiled in water and pounded.

36. Pulses and oil-seeds such as groundnuts, sesame and pumpkins seeds provide 10 to 15 per cent of the energy intake. However, their consumption is clearly declining in favour of edible oils in the towns. The non-oily pulses are little used in preparing food in Central Africa. They are consumed mainly in the central savanna in the urban centres within the country as niebe or asparagus beans. Traditional food recipes include packaged preparations of bean flour paste and termites or crabs to accompany the cassava ball.

37. Animal products provide 8 to 10 per cent of the energy intake. Beef is the most consumed in the capital, the urban centres and the western savanna.

38. Cereals such as millet and sorghum are representative of the food habits of the people living in the savanna. They are consumed in the form of a ball or paste cooked in water using a flour porridge. It should be noted that part of the millet and sorghum output is brewed into beer. Maize is most often cultivated in the southern part of the country. In the forest zone, fresh maize is prepared in packets in the form of a paste with vegetables, meat and termites. In the savanna zone, maize is ground into flour to be used in preparing maize balls. Rice is mainly consumed in the southern part of the country and the western savanna but, urban centres excepted, the demand for rice is relatively weak in the Central African Republic.

39. The consumption of green leaves is relatively high in the Central African Republic. They are particularly used during the lean season and important for achieving a balance in the mineral and vitamin content of the Central African diet even though their energy content is fairly limited. The national food (ngouza) which is highly appreciated by the people is prepared from young shoots of cassava leaves and may contain fresh or smoked fish, meat, groundnut paste, pumpkin seeds and palm oil. This sauce dish normally accompanies the cassava ball, plantain or rice.

40. In Sao Tome and Principe, the staple food is made up of bananas, breadfruit, and more recently matabala or cocoyam. The national dish, called "calalu" is generally composed of a green-leaf sauce, other vegetables, palm oil, meat or fish and is eaten with the breadfruit or matabala. Rice and bread are appreciated mostly by the urban population. Maize, which is the sole local cereal, is cultivated mostly for livestock and is otherwise consumed fresh or in flour form. Cassava is also consumed in flour form.

Table 2: Production, consumption and storage of food products in 1982 to 1984 (estimates) and in 1990 to 1985 projections

(in tons)

	1982-1984			1990		
	Consumption/year	Production/year	Imports for storage	Consumption/year	Production/year	Imports for storage
Maize	1 050	500	550	1 600	1 600	-
Wheat flour	3 700	-	3 700	3 700	-	3 700
Rice	3 100	-	3 100	2 600	-	2 600
Others*	8 700	8 700	3 100	11 000	11 000	-
Sugar	960	-	960	1 000	-	1 000
Oil	810	340	470	1 005	820	185
Milk (powder)	200	-	200	400	-	400
Meat	950	550	400	1 150	930	220
Fish	3 700	3 700	-	5 200	5 200	-
Beans	620	80	540	660	260	400
Salt (raw)	78	-	690	90	-	590
Salt (processed)	612	-	-	500	-	-
Total	24 480	13 870	10 610	28 905	19 810	9 095

Source: Interim report on the National Food Strategy of the Democratic Republic of Sao Tome and Principe prepared for UNDP by the Royal Institute for the Tropics, Amsterdam, August 1985.

* In cereal eeqiovalent.

41. The animal protein needs of the people of Sao Tome and Principe are largely met through fishing. Consumption rose from 27 kg/year/person in 1974 to 41 kg/person/year in 1984 and the Ministry responsible projects that per capita consumption would increase to 45 kg/year/person in 1990 and 54 kg in 1995. Until 1978, the country was importing fish but is now exporting frozen fish.

42. Food habits in Cameroon vary from province to province but generally the staples are cereals, roots and tubers. In the southern part of the country for example, cereals like millet and sorghum constitute the staple food of the people. In contrast, roots and tubers are consumed in very small quantities in that part of the country.

43. The high consumption level of fish goes to compensate the very low protein content of red sorghum thus allowing the people to have a fairly well-balanced diet. Garí or tapioca are consumed mainly in the coffee growing area and in Douala while dried cassava is consumed in the cotton and livestock area. Finally, yams and fresh cassava happen to be the crops whose consumption is most evenly distributed over the national territory of Cameroon.

44. In the Congo, the food consumption patterns vary widely but the staple remains cassava. In this connection, starchy foods like cassava, sweet potatoes, yam and plantain account for more than 70 per cent of the food caloric intake. Cassava consumption is estimated at 425 kg/year/person in the rural areas and at 175 kg/year/person in the urban areas. Among the rural people in the southern part of the country, cassava is the predominant staple food and very little else is eaten with cassava.

45. The urban food consumption pattern in the Congo shows a high consumption rate of wheat (estimated at about 84 kg/year/person) and cassava (which is consumed in various forms such as chikwanque and fufu). In the main towns, consumption is also characterized by the presence of imported foods which are virtually unknown in the rural areas, substantial quantities of fish (especially smoked fish accounting for 53 kg/year/person of fresh fish equivalent) and by appreciable quantities of meat. The inequalities in food consumption are most visible in the major towns where all food has to be bought. This is why for most of the people whose average income does not allow them to afford sophisticated food items which are relatively expensive, the daily diet is made up mainly of inexpensive foods such as cassava and smoked fish.

Table 3 below shows consumption levels of food in the urban and rural areas of the Congo.

Table 3: Consumption of food product (kg/person) in the Congo

Products	Modern pattern	Traditional pattern
Cassava (tuber equivalent)	175.0	425.0
Rice	12.0	1.5
Wheat flour	80.0	5.0
Plantain	30.0	30.0
Tuber (other than cassava)	7.5	7.5
Maize	2.0	2.0
Red meat	8.5	3.0
Poultry	6.0	1.0
Eggs	1.3	0.1
Edibles oils	7.2	6.2
Calories	1 805	1 634
Total protein	51.3	29.3
Animal protein	11.8	7.18

Source CIATA - Brazzaville, Esquisse d'une politique de développement agricole, July 1986.

46. As for other starchy foods such as plantains, cocoyams and macabo, their consumption is mostly limited to the forest area. They are usually cooked in water and served in pieces or pounded. Sorghum used to be staple of the people in the savanna zone but is steadily losing ground to cassava. Maize is little used as food, being mostly distilled or brewed into beverages like the other cereals.

Food dependency

47. The poor performance of food production resulting partly from the predominance of export crops has made the countries of the subregion to resort to massive importation of food in order to meet the needs of their people. Nevertheless, revenue from cash crops such as coffee, cocoa, cotton and timber have enabled them to meet expenses incurred in the importation of food and their food balance-of-payments (fishing products excepted) shows a surplus.

48. However, this apparently positive balance in the subregion conceals siginificant disparities from country to country. Those disparities are highlighted in the table below.

Table 4: Imports and exports of agricultural products (fishing products excepted) in the Central African subregion
(in thousands of US dollars)

	Imports				Exports			
	1983	1984	1985	1986	1983	1984	1985	1986
Cameroon	103.9	79.1	96.3	117.7	164.0	197.6	233.8	221.4
Central African Republic	19.9	14.3	14.8	19.9	2.8	2.9	3.1	3.3
Chad	13.2	23.0	37.0	20.9	105.0	104.4	86.6	86.0
Congo	55.5	69.1	66.6	63.6	2.7	10.1	11.5	8.3
Equatorial Guinea	3.9	5.0	4.1	3.4	13.4	15.2	17.5	13.0
Gabon	87.4	93.6	99.3	94.7	5.2	5.1	3.7	4.3
Sao Tome and Principe	4.1	4.9	3.9	4.0	10.8	9.8	7.2	6.0
Yaounde MULPOC	287.9	289.0	322.0	324.2	303.9	345.1	363.4	342.3

Source: FAO, 1987, Trade Yearbook, 1986.

49. In Gabon, the import of food and beverages has increased at an annual rate of 16.5 per cent in current value during the last decade with an acceleration over the last five years.

50. In the Central African Republic, the share of food imports in GDP rose from 35 per cent between 1975 and 1979 to 43 per cent between 1981 and 1984 while Sao Tome and Principe imported nearly all its maize, wheat, rice and beans.

51. With regard to the Congo, the table below shows national production levels and the degree of self-sufficiency attained in the production of the main staples.

Table 5: Production and consumption of various food products in the Congo during 1986
(in tons)

Product	Production	Consumption	Difference (Production-consumption = Imports)	Degree of self-sufficient (percentage)
Cassava	561 167	606 625	(50 000)	92
Plantains	66 624	62 124	+4 500	107
Ptatoes	400	1 582	(1 200)	25
Other tubers	17 131	15 531	+1 600	110
Maize	7 090	9 090	(2 000)	78
Rice	378	14 591	(14 200)	3
Groundnuts (shelled)	180	3 165	(3 000)	6
Dried beans	9 000	14 613	(5 613)	62
Fruits	16 167	16 567	(400)	98

Source: Peoples Republic of the Congo, Conseil national de l'agriculture, Analysis of the agro-food situation in the Peoples Republic of the Congo, November 1987.

Table 5 shows that the Congo is highly dependent on the outside world for rice and potatoes and less so for dried beans.

Table 6: Pattern of food imports in the Central African Republic from 1980 to 1985
(in thousands of tons)

	1980	1931	1982	1983	1984	1985
Wheat and other cereals	4.2	3.4	8.5	4.2	0.6	0.9
Salt	6.2	4.6	5.3	7.5	6.3	5.5
Sugar	0.6	0.0	1.9	3.8	3.6	7.2
Flour	8.3	8.6	2.4	1.4	0.9	2.2

Source: Central African Republic, Food security, Strategies for consideration, June 1988.

52. Even though the Central African Republic is virtually self-sufficient in staples such as starchy foods, cereals, oilseeds and petty livestock, it is still deficient in animal proteins, edible and industrial oils, sugar and some other items.

53. With the exception of Sao Tome and Principe and the Central African Republic, the countries of the Central African subregion are major importers of fishing products. In 1986, the imports of all types and categories of fishing products were estimated at $US 80 million of which Cameroon accounted for $US 38 million and the Congo for $US 30 million. The magnitude of these imports is shown in the table below.

Table 7: Imports of all types of fish, crustacea, molluscs, fish products and fish preparations of some countries in the Central African subregion
(1986 data ir kg/person)

Cameroon	:	8.3 kg/person
Central African Republic	:	negligible
Congo	:	18.5 kg/person
Equatorial Guinea	:	5 kg/person
Gabon	:	7.0 kg/person
Sao Tome and Principe	:	5.9 kg/person

54. With regard to food aid, the subregion received 107,600 tons of cereal in 1986 out of which 68 per cent went to Chad, and 3,098 tons of dairy products out of which 82.7 per cent went to Chad.

Table 8: Total cereal food aid per country and per person in the Central African subregion during 1986
(in kilos)

Cameroon	1.16	-	1.06	0.1
Central African Republic	4.05	-	2.04	2.0
Chad	14.3	2.74	2.13	9.4
Congo	1.06	-	1.06	-
Equatorial Guinea	9.72	4.0	5.73	0.25
Sao Tome and Principe	58.0	26.0	29.0	3.0

Source: ECA mean figures based on 1987 FAO data on quantified food aid, No. 5.

Agricultural development constraints

55. In most countries of the subregion, rural-urban drift is one of the most important and characteristic factors that limit the expansion of agricultural production. The villages are being depopulated with the result that the rural labour force is dwindling and the farming population is growing old.

56. In Sao Tome and Principe, the farming population accounted in 1970 for 67.5 per cent of the total active population. By 1980, this percentage was no more than 51.6.

57. Owing to the gradual decrease in the active farming population in the Congo, the National Development Plan projects that in 1996, one active farmer would have to feed 10 people.

58. On the whole, agriculture in the subregion still remains at the subsistence level. There is virtually no trade between the towns and villages. The farmers are therefore obliged to live in autarky and to produce only just enough for their families. In the hinterland, certain regions are cut off from others and the fact that the road infrastructure is inadequate and means of transport not sufficiently available make it difficult to market produce.

59. Farming techniques and practices have not much evolved and the rudimentary implements for farming mainly consist of hoes and cutlasses with the women most often providing the manual labour. What is more, the practice of shifting cultivation on burnt land further encourages the loss of soil fertility.

60. Because storage, conservation and marketing facilities are lacking in producing areas and there are many middlemen, producer prices are low and post-harvest losses exceed 50 per cent in cases.

61. Also, because villages are scattered and the population density is low, not to mention the fact that certain areas have rugged physical features, any intervention is difficult and expensive.

62. In this connection, production and investment costs both in agriculture and livestock are twice as high in Gabon as they are in the neighbouring countries.

63. Finally, because local products are not as competitive as imported products which are in most cases subsidized, producers do not feel encouraged to produce a marketable surplus.

64. The table below allows for a comparison to be made of the calorie cost of some staple foods in Brazzaville, the Congo.

Table 9: Price per kilogramme and per kilo-calorie of various starchy foods in Brazzaville from 1978 to 1983
(CNSEE prices)

	1978		1983	
	CFAF/Kg	CFAF/Kcal	CFAF/Kg	CFAF/Kcal
Fufu	110	32	102	59
Chikwangue	105	77	152	112
Bread	111	42	222	84
Rice	245	68	311	86
Plantain	100	135	185	250
Potatoes	276	230	395	327

Source: UNICEF, Mother and child health situation in the Peoples Republic of the Congo.

Fufu: Cassava flour; Chikwangue: Cassava bread.

65. In Bangui, local maize costs twice as much in calorie terms as imported cereals and bread nearly as much as cassava. In Cameroon, local rice is sold at a higher price than imported rice. Indeed the distance between producing and consuming areas is one factor that goes to raise the selling price of local rice.

Socio-cultural factors in food consumption

66. In traditional African societies, food consumption still depends very much on socio-cultural factors which to some extent affect the nutritional status of individuals. Food is generally associated with rituals and daily customs and both individuals and society have conformed to and kept those habits long after the reasons which led to their adoption have been forgotten.

67. In many societies in Africa family practices regarding the sharing of food have it, for example, that the lion's share should be reserved for the head of family or for older persons. Mothers and children generally resceive a smaller share than their nutritional needs would allow.

68. In certain societies in Cameroon, people avoid eating with their mothers-in-law and giving them left overs from the previous day but it happens that women cook only once a day and generally do so in the evening.

69. The word taboo refers to acts or things that are not done or which are considered evil, abnormal or bad. Food taboos or beliefs constitute for each society a law that governs the behaviour of everyone and their attitude to a particular food item or group of foods. Prohibitions may be permanent or circumstantial as is the case for women who are pregnant or nursing, infants before they are weaned and adolescents before puberty. It should also be noted that many foods are prohibited on the grounds of sickness, physical or mental imbalance.

70. Prohibitions may apply to an entire population, ethnic group, clan, family, male or female, child and so on. They may also forbid a category of individuals from eating one or several foods whose nature may vary from country to country and from place to place.

71. There is currently no precise data and information on the various taboos that apply in the various countries. However, what information is available indicates that it is in particular those groups vulnerable to malnutrition, namely mothers and children, who suffer the most. The nutritional impact of such restrictions on women and children is all the more serious since they apply at a time when their food and nutritional needs are high. Such practices, among others, are the cause for the growth problems of many children and the near-permanent nutritional stress which certain women undergo.

72. The few examples of protein food taboos listed below are given for information.

73. In most countries of the subregion, many tribes believe that eggs should neither be fed to children nor to pregnant women. In Cameroon for example, children are not allowed to eat eggs before they walk and in the Central

African Republic, they may not do so before they are 15 months old. In that country also, monthers-to-be are forbidden to eat eggs because their children will not speak early and they are also refused caterpillars under the pretext that their children will not cry early.

74. In Sao Tome and Principe, certain tribes do not eat eggs and chicken and young children are forbidden to eat fish because they might get worms.

75. The examples are many and varied for each country, ethnic group and so on. It would be exceeding the scope of this report to list them all. Suffice it to indicate only that such taboos and beliefs reflect social, moral and religious values in each of these societies and apply mainly to foods of animal origin.

Other nutritional problems in the subregion

76. There is little data on the nutritional status of people in the subregion as a whole. Where such data exist, the scope is often limited. However, the surveys and studies conducted on this subject in the various countries all show high rates of protein-energy malnutrition with a higher frequency among children aged 0-5 years. The protein imbalance in the diet of the people is caused by the fact that cassava constitutes the bulk of the diet and is very poor in protein.

77. This food imbalance is all the more remarkable in the Congo as the consumption of carbohydrates accounts for more than 70 per cent of the calorie intake. The calorie deficiency seems to be higher in the urban areas, particularly among women and children in low-income households. In this regard, a survey of 900 school children of the age of eight in Brazzaville indicates that many children do not eat their fill and many of them have to settle for one meal a day.

78. Animal product consumption is also very poor in the towns. Indeed, beef which is the meat most consumed in the urban areas is relatively expensive and not always available. In the rural areas this deficit is more or less compensated with game and other hunting products.

79. Malnutrition among young children is attributed to a certain number of factors which include premature weaning, protein-deficient weaning foods (too much diluted and unenriched porridge), poor nutritional status of mothers and unhygienic conditions which promote certain infectious diseases. Low family purchasing power and ignorance of child food needs also contribute to such malnutrition.

80. Food deficiencies have to do with several essential nutrients whose nature and importance varys both with the geographical location and the socio-economic category of people. In the rural areas, subsistence farming hardly covers the food needs of people and rarely are imported foods available. Those rural areas which have a better road transport network are far more exposed to malnutrition than the more remote areas because the farmers prefer to sell their produce for other goods and a substantial part of their output thus escapes family consumption.

81. In the towns and urban centres, the risks of malnutrition are all the greater for low-income social groups or large households. In Brazzaville, for example, more than 40 per cent of the households have more than six members.

82. In spite of the differences among regions and socio-economic groups, it can be said today that all social strata in the urban and rural areas of the subregion are exposed to the risk of malnutrition. Women and children are the most exposed to such risks. Indeed, quite apart from family inequalities in terms of food consumption, women and children are also the victims of prohibitions or taboos regarding a certain number of foods essential to a balanced diet.

83. For example, many tribes forbid the giving of eggs to children under 15 months. Chicken, ducks and other animals are forbidden to women and children.

84. In the Central African Republic, about 1 per cent of the population is debilitated as a result of protein-deficiency and many cases of kwashiorkor have been reported.

85. Also worth mentioning is the prevalence of anaemia, more particularly among women and children. Responsible for such anaemia are insufficient iron in the diet, low consumption of foods of animal origin and the presence of parasitic diseases.

86. Finally, endemic goitre, caused by iodine deficiency, is also one typical nutritional disease in the subregion. It has been developing most substantially in the Central African Republic, especially in the forest areas of Bangassou and Lobaye among certain ethnic groups. In Cameroon, the prevalence of endemic goitre in certain regions is so high that the disease has been accorded priority in public health policy.

87. In contrast, vitamin deficiency seems to be very limited in the subregion and subject at times to seasonal variation. This is mostly due to the high consumption of green-leafed vegetables (which are very rich in vitamin A) and palm oil.

CHAPTER II
CONSUMPTION OF NON-CONVENTIONAL FOOD PRODUCTS IN THE SUBREGION

88. The concept of non-conventional food is rather difficult to define. The term is used in this study to distinguish on the one hand, between foods that normally constitute the staple diet of Africans (cereals, roots and tubers, livestock meat) and, on the other hand those foods that are generally unknown or little used by consumers. Owing to the complexity of food and eating habits and social behaviour relative to food whether as a matter of cultural, physiological, psychological or ecological reasons, it is rather difficult in Africa to draw the line between what is conventional food and what is not.

89. Food consumption patterns may vary very widely in accordance with the types of foods consumed in various communities for cultural and traditional reasons. This is why certain food products which go down very well and are appreciated by one community may be unknown or considered non-conventional by another.

90. For example, breadfruit which is a staple food for the people of Sao Tome and Principe and certain regions of Madagascar is virtually unknown in Zambia. Cassava leaves which are widely consumed in certain countries of Central Africa and in Madagascar do not feature in the food habits of the people of Togo and other West African countries. Conversely, gari or tapioca prepared from cassava and which forms the staple in such West African countries as Nigeria and Togo is unknown or very little used in Central Africa. Monkeys are common food in certain areas of Central Africa but in other parts of Africa, they are considered sacred animals or taboo.

91. This chapter will review collected or gathered plant and animal foods and wild game. In spite of their nutritional and food value, particularly for rural people, their contribution to national economies is not generally taken into account. Merely because they are collected in their natural state and because of their insignificant commercial value, it is difficult to quantify their consumption.

Products of animal origin

(a) Wild game as a source of protein

92. The African continent highly abounds in a diversified range of wildlife, particularly those belonging to the species of artiodactyles. These wild animals have been exploited since the origin of man himself and most people in the rural areas still depend on wild animals for the bulk of their daily supply of animal protein.

93. In the Central African subregion, the animal protein deficit resulting from inadequate national production of livestock meat is in part compensated for by game, particularly in the rural areas.

94. Game or bush meat refers to any meat from any type of wild animal. Almost all mammals, birds, reptiles and rodents are consumed with the exception of certain types of birds and felines such as lions, panthers and leopards which are forbidden because they happen to be the totems of certain communities.

95. Hunting is generally regulated in all the countries. However, poaching is widely practised. Certain farmers hunt both for their own immediate needs and to secure monetary income. Indeed, there is a large and very profitable market for bush meat in the major towns among the high-income social strata. In this regard, the restaurants in the capital towns are regularly supplied with all kinds of game meat.

96. Among the rodents, the great alaucode (tryonomys swinderianus)more widely known as "grasscutter" in certain West African countries is highly prized.

Its meat is in great demand in the major towns where it is sold dearer than beef.

97. With regard to reptiles, it would appear that large snakes like boas and pythons are the most appreciated. It is also interesting to note that monkeys are widely consumed in the subregion, in particular the green monkey.

98. It is obviously difficult to evaluate the production of bush meat because this depends on how much of it is consumed. Game meat is consumed either fresh or dried. Generally, however, bush meat is sold on the urban market smoked or dried.

99. Game meat consumption varies considerably from region to region and between towns and villages. In the Congo, bush meat consumption is very high in the river basin areas, Sangha and Likouala where each person consumes as much as 9.1 kg/year. In other regions of the rural areas, the consumption is 4.5 kg/year/person while in the towns, game meat consumption is only 0.1 kg/year/person.

100. Unfortunately, certain countries are currently losing their wild game because of bush fires and the intensive and often irrational exploitation of wildlife.

(b) Animals collected or gathered

101. The animals collected include caterpillars, termites, grasshoppers, snails, frogs and turtles. Just like game, these animals are extensively consumed in the subregion both in the rural and urban areas. They are generally found on the daily menu of the rural people and to a lesser extent, on that of urban people.

102. Consumption of animals gathered both seasonally and cyclically in this way is linked to regional features and the relative importance of such animals in the diet is more local than national. Because they are of good nutritional value, they play an important role in the food intake of rural people during the lean season.

103. Caterpillars are widely consumed in the subregion. Because they are very much appreciated, they are sold on urban markets either fresh or dried. They are very rich in fats and iron and are often added to meat in green-leaf sauces, particularly gnetum.

104. Termites are also widely consumed in the subregion. They are mixed with bean flour paste to make a highly appreciated dish in the Central African Republic to accompany the millet balls to which they provide a protein supplement.

105. In Cameroon, termites and locusts are mainly consumed in the cotton and livestock raising areas while maggots and caterpillars are respectively consumed in Yaounde and the areas where coffee, cocoa and tobacco are grown. Again in Cameroon, snails are very widely gathered and consumed in the cocoa and tobacco-growing areas.

Products of plant origin

106. Vegetables, in particular green-leafed vegetables, occupy an important place in the diet of Central African people. Although their energy content is limited, they constitute an important element for food balance in terms of minerals and vitamins because they contain such essential nutrients as protein, iron, calcium, vitamin A and vitamin C. Their supplemental value becomes particularly important during the lean seasons and they prove to be indispensable in a diet where animal products are insufficient.

107. Green-leafed vegetables are very much appreciated and used to prepare a certain number of dishes, mainly the sauces which accompany the starchy or cereal staples eaten in particular regions.

108. Some such vegetables are gathered in their natural state while others come from cultivated plants such as cassava, sweet potatoes, cocoyams, pumpkins and asparagus beans.

109. Among the leaves gathered in the subregion, gnetum, commonly referred to as koko is the vegetable used in the food eaten by all social strata in many of the countries. Currently, the gnetum species grows spontaneously in the forest and by watercourses. The leaves are generally finely grated before being used in the sauces but they can also be eaten raw and provide an appreciable supply of proteins, macro- and micro-nutrients.

110. In the Central African Republic, gnetum is used mostly by the people of the western or south-western parts of the country. In the Congo, a distinction is drawn between two species, namely gnetum Africanum (the small-leafed and more widespread variety) and gnetum buchlozianum, the large-leafed variety.

111. Apart from koko there are many varieties of vegetables that are gathered for subsistence use by rural people in the subregion. However, there are no data at the moment concerning their identity and the quantities consumed or gathered.

112. Among the gathered vegetables consumed in the Congo, mention can be made of tinia (dioscoree mangenotii) and nsekeni (bosquoa angolensis). In the Central African Republic, kankalenque is consumed mainly by the Ali people who live in the Ombella M'poko region. Vaa, belonging to the spinach family, is a very sweet vegetable.

113. In the category of green leaves gathered from cultivated plants, cassava leaves are the most widely consumed. The preparation varies with local customs and preferences but they are very rich in protein (about 4 per cent) and provide both minerals and vitamins.

CONCLUSIONS AND RECOMMENDATIONS

114. Poor agricultural performance (mainly in the growing of food for home consumption), the low degree of monetarization in the rural areas and the very high urbanization rates in certain countries have helped to worsen the food deficit facing the countries of the subregion.

115. Even though potentially self-sufficient in staples such as starchy foods and cereals, on the whole, the subregion depends largely on the outside world for many other cereal staples such as wheat and rice and for meat, dairy products, sugar and edible oils.

116. Agricultural development is being held back because certain countries of the subregion are remote, the farming population is diminishing and ageing, road infrastructure and transport facilities are inadequate, and the farmers have very low technical expertise.

117. However, using the substantial revenue they secure from such mineral resources as petroleum, manganese and diamonds as well as from cash crops, some countries of the subregion have been able to cope somewhat with the rising cost of their food imports.

118. Based as it is on starchy food, with few exceptions depending on the region, the diet of people in the subregion is unbalanced in terms of protein. The balance could be restored through greater consumption of cereals and animal products. Regrettably, however, much of the local millet, sorghum, rice and maize that is grown is processed into alcohol and this constitutes a substantial loss in terms of nutrition.

119. What is more, certain taboos and prohibitions, particularly those affecting young children and pregnant women with regard to protein foods, often have adverse effects on the nutritional status of the people. Poor food hygiene in certain countries promote the development of infectious diseases which gain the ascendancy during the lean season when food intake is not sufficient.

120. Non-conventional food products, in particular collected or gathered plant and animal products and big game are widely consumed in the subregion and make a significant contribution to the nutritional balance of the diet of rural people. The urban population has less easy access to these products because of the poor supply facilities in the towns.

121. The importance of wild animals as a source of animal protein for those people who eat them needs no further demonstration. Currently however, there is no scientific basis for evaluating the available potential. Indeed, wild animals have practically not been as intensively researched as have domesticated animals. Their nutritional importance for great numbers of people has always been under-estimated and overlooked by the policy-makers responsible for rural development planning.

122. For those African countries in which human needs are more pressing, the use of game or bush meat as a souce of secure and lasting nourishment in terms of protein has become imperative. And yet, it is regrettable to note that in certain countries, this exceptionally valuable biological wealth is perishing under the effect of wanton and irrational exploitation by poachers and through the effect of certain methods of farming.

123. Many varieties of plant and animal products that are collected or gathered are also consumed by many communities in the subregion. Such products have good nutritional value and largely supplement the mineral and protein taken in with food in those areas where milk and fish are not available.

124. As for various vegetables, in particular green-leafed vegetables, they have their place in the food habits of the rural people and to a lesser extent in that of the urban population. Because of their mineral and vitamin content and the not insignificant degree of protein they contain, they have proved indispensable to a diet in which animal products are insufficient.

125. In many countries where the food and nutritional situation shows serious problems in terms of protein and energy, it is important to increase not only the availability of food for each inhabitant but also the consumption of protein-rich foods.

126. Given the high cost of food imports and the gradual changes in food habits that they bring about, it would be necessary, among other things, to develop and promote the consumption of local products.

127. The objective of this report is therefore to highlight the importance of the wide variety of food products that are usually unknown or little used as a source of food for many people living in the rural areas of Africa.

RECOMMENDATIONS

128. The lack of official statistics that could be used to evaluate the contribution of non-conventional foods to national economies (if only in nutritional terms) results from the lack of interest on the part of government planners. With a view then to increasing the consumption of such protein-rich foods and to securing regular supplies of them in future so as to meet the food needs of people and promoting co-operation in this area, the following recommendations are submitted for approval:

(a) A subregional study should be conducted in order to evaluate the consumption and use of wild plants and animals in the various ecological zones;

(b) Given the fact that wild animals are a significant renewable source of food, appropriate measures and actions should be taken at the local, national and regional levels in order to preserve the enormous forest potential through rational management and exploitation;

(c) Subregional and/or regional seminars or workshops on non-conventional food resources should be organized with a view to sharing information and experiences on those foods that are little or underutilized so that waste would be avoided and existing food resources increased.

ANNEX
BIBLIOGRAPHY

1. World Food Programme, Rapport de mission chargée de l'évaluation intérimaire du projet République centrafricain 2652; Développement rural à objectifs multiples, September 1987.

2. FAO Trade Yearbook, volume 40, 1986.

3. Agricultural Development Policy Survey, Interim report, volume II, CIATA, Brazzaville, July 1986.

4. Ministry of Rural Development, Peoples Republic of the Congo, Conseil national de l'agriculture. Analyse de la situation agro-alimentaire en République populaire du Congo, volume I, November 1967.

5. UNICEF, Situation sanitaire des enfants et des mères en République populaire du Congo.

6. United Republic of Cameroon, National Nutrition Survey, Final Report, October 1978, University of California, Los Angeles, Nutrition Assessment Unit (UCLA), USAID.

7. World Food Programme, Note on the Central African Republic, July 1984.

8. FAO Circulaire sur les pêches No. 770.13, Etudes nationales pour le développement de l'aquaculture en Afrique, Central African Republic, 1985.

9. Central African Republic, Food security and strategies for consideration, Maurice Adouaka-Parou, June 1988.

10. Réflexion sur la situation alimentaire et nutritionnelle en République centrafricaine, Possibilités d'action, UNICEF, Bureau de Bangui, December 1983.

11. Peoples Republic of the Congo, Ministère de la santé et des affaires sociales, Direction générale de la santé publique, Direction de la santé maternelle et infantile et de l'education pour la santé, Situation of food and nutritional programmes in the Peoples Republic of the Congo.

12. Ministry of Economic and Physical Planning, Republic of Cameroon, Current nutritional situation in Cameroon, paper presented at the National Seminar on Food and Nutritional Strategies, Yaounde, 26-29 July 1988, by Dr. Pondy Njiki Otto.

13. Paper presented by Mr. Selle Gilbert on the Nutritional education of farming communities in the Central African Republic, Institut national, technologie alimentaire, Ecole supérieure des sciences de la nutrition, Tunis, 1979-1980.

14. Interim report on the national foods strategy of Sao Tome and Principe, prepared for UNDP by the Royal Institute for the Tropics, Amsterdam, August 1985.

15. Seminar on Food and Energy from Unconventional Sources with application of Nuclear Techniques, Bangladesh Atomic Energy Commission, Dacca, 19-30 July 1976; some comments about requirements and unconventional food, "Unconventional foods, traditional food patterns and food and nutrition policies".

16. Nature and Wildlife, International Review for Nature Conservation in Africa, volume III, No. 2, April-June 1987, volume III, No.4, October-December 1987.

17. FAO, Food and Nutrition, volume XIII, No. 1, 1987.

18. FAO, Fifth World Food Survey, 1985.

19. Republic of Cameroon, Ministry of Economic and Physical Planning, Direction de la Planification. National Seminar on Food and Nutritional Strategies, Yaounde, 26-29 July 1988. Theme No.7: "Current nutiritional situation in Cameroon" by Dr. Pondy Njiki Otto.

20. Food for Africa, The promotion of traditional and under-utilized foodstuffs, Report of a Regional workshop organized by the Zambia Alliance of Women in collaboration with FAO, Lusaka, 12-19 May 1985.

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LC/NAIROBI

MANAGEMENT OF ENVIRONMENTAL DEGRADATION PARTICULARLY DROUGHT AND DESERTIFICATION ASPECTS, IN THE IMPLEMENTATION OF AFRICA'S PRIORITY PROGRAMME FOR ECONOMIC RECOVERY

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I. INTRODUCTION

1. The African region has been adversely affected by a series of bad and debilitating droughts which have spread over a period of nearly 20 years from 1968 to 1986. The droughts were particularly severe in arid, semi-arid, and sub-humid parts of the region, affecting at least 26 countries, and causing havoc in their economies by the disruptions and damage they inflicted on agriculture and food production. The worst-hit areas were located in the Sudano-Sahelian climatic zone of the continent which stretches from West African States of Senegal and Mauritania, and cover the whole of the Sahel countries as well as Ethiopia, Somalia and Kenya in the eastern parts of the continent. Also hit, though not as disastrously, have been the Southern African States including Mozambique, Zimbabwe, Botswana and Angola, among others. Even the more normally humid countries have not always been spared, and they too have had to adjust to dry periods longer than normally expected. Following in the wake of the Sahelian drought of 1968-1973, it was quickly established that most of the African droughts are accompanied by a more insidious environmental degradation and the loss of croplands and grazing lands, through a largely human-induced process known as desertification.

2. In response to drought and desertification in the Sahel in West Africa, a series of institutions such as the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), the Institut du Sahel and the United Nations Sudano-Sahelian Office (UNSO) were established, partly to provide emergency aid to the affected countries, and secondly to start work on more long-term solutions to the problems which had been set up by United Nations agencies such as UNESCO, FAO, UNEP and WMO quickly revealed that what was being observed was the end result of years of environmental mismanagement and degradation which had led to the encroachment of the desert, and in the face of rapidly increasing population in the subregion was bound to deteriorate even further. In this context, the droughts only served to highlight and to exacerbate a process of permanent ecological damage. This ecological damage has been characterized by, inter alia, severe soil erosion and the spread of sand dunes in former agricultural lands. The rapid decline of agricultural lands, particularly those located in the ecologically fragile semi-arid zones, the alkalinization and salinization of irrigated lands, the degradation of rangelands caused by overstocking and overgrazing, and the decline of woodlands and forestlands caused by massive clearing and deforestation. All these combined were found to be indicators of the process of desertification, and with the spread of droughts to other parts of Africa it was soon realized that these processes were not only confined to the Sahel lands, or for that matter to Africa alone, and that one was in fact dealing with a global process. It was this realization which led to the United Nations Conference on Desertification which was held in Nairobi, Kenya in 1977.

3. The report reviews the management of environmental degradation in Africa with specific reference to activities to combat the impacts of drought and the process of desertification within the context of Africa's Priority Programme for Economic Recovery (APPER). Drawing examples from the Maghreb countries as well as countries of the Permanent Inter-State Committee to Combat Drought

in the Sahel (CILSS), the Intergovernmental Authority on Drought and Development (IGADD) and the Southern African Development Co-ordination Conference (SADCC), recommendations were made for further action by member States, with the assistance of ECA, in collaboration with the other agencies of the United Nations system and other international organizations, to sustain drought relief and desertification control.

II. THE PRESENT SITUATION ON THE IMPLEMENTATION OF THE DROUGHT AND DESERTIFICATION ASPECTS OF APPER

4. The United Nations Conference on Desertification (UNCOD) held in 1977 provided an excellent forum for discussing the desertification problems for the whole world and it produced 28 recommendations for action to combat desertification in what became known as the Plan of Action to Combat Desertification (PACD). The recommendations provided for action at the national, subregional, regional and international levels, and at the end of the Conference, the United Nations Environment Programme (UNEP) was charged with the responsibility of providing a secretariat to co-ordinate all aspects of the Conference follow-up including the establishment of a global anti-desertification body along the lines of the recommentations contained in the Plan of Action. Although UNEP was charged with this responsibility, it was understood that, in keeping with one of the recommendations of the Plan of Action, all the United Nations specialized agencies, including the regional economic commissions, would be expected to participate actively thereafter in seeing to the implementation of the Plan of Action to Combat Desertification. In fact, the United Nations General Assembly, by its resolutions 32/169, 32/170 and 32/172 of 19 December 1978, called upon the regional commissions to participate in the implementation of the Plan of Action.

5. For the African region, ECA is the primary organ of the United Nations system in the implementation of APPER and the United Nations Programme of Action for African Economic Recovery and Development (UN-PAAERD). More than 11 years since UNCOD was held and nearly four years since APPER and the UN-PAAERD were adopted, it should be possible to look back at the achievements of all the various organs of the United Nations system, the subregional and regional institutions which have been established to deal with this problem, and the activities which have been initiated in the member States of ECA. The period in question has been particularly difficult for the affected countries in the African region. The droughts have not only persisted but they have also intensified to such an extent that they have revealed the structural weakness of the economies of many of these countries. Many of them have been unable to cope as agriculture and food production have collapsed. They found themselves unable to feed their fast-growing populations and have had to resort to massive food imports, often paid for with aid money. Drought and desertification have thus succeeded in worsening the economic crisis such that it is not possible to address the issues and produce a reversal in development without addressing this twin problem.

6. At first, drought was looked upon as a mere climatic deviation which would soon correct itself. But when it is both spread and intensified, and is found to be closely associated with desertification, it becomes clear that effective

management control strategies have to be worked out to deal with drought and to attempt to halt desertification. The period between 1968 and 1973 helped to propel drought and desertification on to the economic agenda of many African countries and more particularly the Sudano-Sahelian region. Following the United Nations Conference on Desertification, CILSS was strengthened and given increased responsibilities for working out effective anti-desertification projects and programmes for the Sudano-Sahelian region. Similarly, the Institut du Sahel was strengthened and a technical institution, namely AGRHYMET, was added to it and made even more active. Previously, several donor countries and the affected West African countries, including Burkina Faso, Chad, Mali, Mauritania, Senegal and Cape Verde had formed the Sahel Club (Club du Sahel) to facilitate funding of various anti-desertification programmes. Now UNSO, which had been established to organize funding and co-ordinate projects for the first four Sahelian countries, was strengthened and given a mandate to cover a total of 19 African countries including Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Djibouti, Ethiopia, the Gambia, Guinea, Guinea-Bissau, Kenya, Mali, Mauritania, the Niger, Nigeria, Senegal, Somalia, the Sudan and Uganda. Later, two new subregional institutions, namely the Intergovernmental Authority on Drought and Development (IGADD) to service the Eastern African subregion and the Southern African Development Co-ordination Conference (SADCC) to service the countries in Southern Africa were established. The growth of these institutions indicated that every effort is now being made to manage the deleterious effects of drought and to control desertification. ECA took on an even more active role in the co-ordination of anti-desertification programmes from the national level up to the regional level.

7. In 1980, the first Economic Summit of the Assembly of Heads of State and Government of the Organization of African Unity (OAU) was held in Lagos, Nigeria, and agreed on the Lagos Plan of Action for the Economic Development of Africa, 1980-2000. This summit identified drought and desertification as important aspects of natural resource development strategy in Africa and prescribed some cures for these problems in the affected countries of the region. The Plan singled out drought and desertification as priority areas of environmental concern requiring immediate action in Africa. Throughtout the period, ECA has kept OAU informed of its activities in the various economic fields, and there have been joint action programmes from time to time to deal with pressing environmental issues including the management of drought and the control of desertification. The latest example of this co-operation came in the joint ECA/OAU document on Africa's Priority Programme for Economic Recovery, 1986-1990 (APPER).

8. The most important anti-desertification activities must take place at the national levels, and even further down, namely at the grass-roots level. Since UNCOD, many African countries have perfected national action plan for the combat against drought and desertification. In the present report, several countries have been examined in a little more detail to learn from their activities some lessons which can then be disseminated to the rest of Africa. In the Sahel countries of West Africa, Senegal was selected and the various anti-desertification programmes that have been mounted were examined; this examination included a comment on the effectiveness of some of these programmes. In the IGADD sub-region, one country was also selected, namely Kenya, and in the Maghreb or

Mediterranean Africa, Tunisia was selected. It was not possible to obtain detailed information on the SADCC countries so a general discussion was made to serve as a comment for their activities which are relevant to drought and desertification. Although there is now a multiplicity of anti-drought and anti-desertification projects throughout the region, they are not always well co-ordinated; neither are they sufficiently well-funded to make a big impact on the twin problem.

9. An assessment of the funding of the total anti-desertification programme, starting from the global level and then going down to the national level is far from encouraging because overall, the funds which had been hoped for to make a significant impact on the problem and in particular to fund trans-boundary projects, have not been forthcoming. Soon after UNCOD, UNEP estimated that anti-desertification programmes in developing countries required a minimum of $US 4.5 billion a year for a period of 20 years to make a significant impact on the problem. A revised figure of at least $US 2.4 billion a year over a similar period was arrived at in a more serious exercise carried out by a team of high-level experts hired by UNEP in 1980. In was found in that year that the maximum funds which could be realized each year for anti-desertification programmes was $600 million, which was far short of what was required. In 1984 it was found that UNSO, the most important single institution combining the joint efforts of UNEP and the United Nations Development Programme (UNDP) was only realizing some $40 million annually to be divided among the 19 countries which were obtaining aid at the time for national as well as regional anti-desertification programmes to visualize the significance of the shortfall list some of the African trans-boundary projects which had first been proposed at UNCOD and the amount of funds required to put them into operation:

(a) The development and management of rangelands and livestock in the Sudano-Sahelian region: $130 million spread over five to seven years;

(b) The northern trans-Saharan greenbelt (five countries): $50-$70 million a year for 10 years;

(c) The Sahelian (southern Saharan) greenbelt: $1.5 billion;

(d) North-eastern African regional aquifer: $30-$35 million a year for five years.

It is important to emphasize that comprehensive anti-desertification programmes require national action as well as the trans-boundary programmes such as those listed above. Nevertheless, it soon became clear from a record of the Consultative Group on Desertification Control (DESCON) meeting serviced by UNEP's new Desertification Branch that there was very little likelihood of raising even a small but significant proportion of the funds required for desertification control. The recent United Nations response to APPER in the UN-PAAERD indicated that additional funding might be found to be used for anti-desertification projects. However, if past DESCON meetings are anything to go by, donors will still show a preference for bilateral basis projects. If this latter objective can be achieved on a bilateral basis it certainly deserves support. However,

it seems clear that drought and desertification will continue to hamper the revival of most African economies in the foreseeable future, unless something dramatic happens in the next two years.

10. In spite of the gloomy financial picture, much has been achieved throughout the African region on anti-desertification since UNCOD in 1977. Among the major achievements are:

(a) Increased public environmental awareness;

(b) Relevant research including research into the application of existing knowledge to managing drought and controlling desertification;

(c) An important start on education and training;

(d) Production and dissemination of information.

These are important beginnings even though they are still dwarfed by the enormity of the problem at hand. Through the good offices of ECA, co-ordination is being pursued at many levels to enable the member States to share experiences. It is therefore important to emphasize the role of ECA in the continuing effort to manage drought and to control desertification.

11. A weak link in anti-desertification in the African region is found in the legislative process. A start had been made on relevant legislation at the national level, but a lot more will be required at the regional and international levels to increase Africa's participation in policy at these levels. Conventions; statutes and protocols have been used in creating intergovernmental institutions for combating drought and desertification. These have included the establishment of CILSS, IGADD and SADCC and several integrated river basin development projects but a lot more will need to be done, with ECA playing an important co-ordinating role.

12. The recent Conference of African Ministers of Environment (AMCEN-1985) in Cairo, Egypt, pointed the way to areas of co-operation at the African level, and it was important that drought and desertification were given the correct attention as areas deserving even greater co-operation. They particularly agreed on several priority regional activities which included projects on environment and eco-development, strengthening the north Saharan greenbelt, combating desertification in the Sahelian greenbelt, strengthening co-operation in the area of the north-eastern aquifer, the Lake Chad Basin Commission, the River Niger Basin Authority combating desert spread in southern Africa, and other water resources improvement schemes.

III. A REVIEW OF ANTI-DESERTIFICATION ACTIVITIES IN THE ECA SUBREGIONS

13. In order to obtain a closer look at the various activities to manage drought and to control desertification it has been decided to go down to the subregional level, and ultimately to the national level in a sample of member States. For

the purpose of this section of this report, Africa has divided into the following subregions:

A. The Maghreb countries

14. The Maghreb subregion comprises Algeria, the Libyan Arab Jamahiriya, Morocco and Tunisia. Dry lands make up some 4.5 million km2 or 95 per cent of the total area. The main settled areas are close to the Mediterranean coast which receives winter rainfall, and the land varies from sub-humid to arid as one travels from the coast to the Saharan fringes in the interior. The subregion has some 80 million ha of rangelands, 80 per cent of which is desertified; 20 million ha of croplands (20 per cent desertified); and 1.2 million ha of irrigated lands, 30 per cent of which is already desertified. The threat of desertification is ever-present, whether one is thinking of rangelands, rainfed croplands or irrigated lands, or forested woodlands. Similarly, the groundwater supplies are constantly under threat due to the possibility of over-pumping.

15. Desertification in the subregion is attributed to overall population growth, the settlement of former pastoral nomads in government settlement schemes, and the spread of agriculture (chiefly aboriculture) to marginal lands. The rangelands are overstocked and overgrazed livestock pressure has led to wind and water erosion; the woodlands degraded by cutting for fuelwood, clearing or the ravages of bush fires. The spread of agriculture to fragile eco-systems is also faced with serious desertification. Sand drifting is common on croplands, and waterlogging, silting, and salinization plague irrigation projects. It is against this background that a slightly more detailed account will now be given about Tunisia as a sample from the subregion to indicate how this member State is responding to drought and desertification and how it is attempting to respond to the Plan of Action to Combat Desertification at the national level.

Tunisia

16. Tunisia is one of the countries in the African region which has taken desertification very seriously and has already prepared a national strategy to combat desertification along the lines recommended at UNCOD and in the Plan of Action. Causes of desertification are as those enumerated for Mediterranean Africa or the Maghreb and include the expansion of agriculture into the semi-arid lands, overgrazing due to population pressure, cutting down of woodlands for fuelwood, and soil salinization in irrigated areas.

17. The national strategy for combating desertification and priority programme covering the period 1987-1991 is located in the Ministry of Agriculture which is also responsible for the co-ordination of all desertification strategies in the country. The various anti-desertification projects are funded from national sources as well as from international donors such as the Arab and Gulf States Fund (AGFUND), EEC, UNEP and UNDP, FAO and UNESCO. The UNESCO/UNEP Integrated Project on Arid Lands (MAB/UNEP) was located in Tunisia; the other part of the project being located in Kenya. A careful look at Tunisia's other anti-desertification projects shows that an effort has been made to cover various aspects of the problem, including:

(a) An inventory of natural resources, including soil mapping for sensitivity to erosion, and the mapping of pastoral resources in the affected areas;

(b) Protection and development, including sand dune fixation and stabilization in numerous affected areas, integrated river basin development, water use, and the rehabilitation of denuded rangelands;

(c) Support research projects, including agricultural rehabilitation schemes, the improvement of sylvo-pastoral zones;

(d) Training, information and the dissemination of knowledge, including creating public awareness about desertification; and

(e) Evaluation and follow-up.

18. A recently prepared list of national anti-desertification projects shows three projects on natural resource inventory, 10 projects on protection and development some of which are still awaiting financing, three projects on follow-up research, four projects on training, information and the dissemination of knowledge including public awareness, and one on follow-up, which involves the monitoring of the desertification process in the country. The UNEP list of anti-desertification projects in Tunisia reveals that the largest single project in the country (expected to cost $168,312,000) is intended to concentrate on soil erosion and desertification control. The project has two broad objectives which include soil conservation, the protection of resources against silting, flood protection and rangeland i,provement on the one hand; and afforestation and forest protection, soil and water conservation, pasture improvement, sand dune fixation, road infrastructure and watershed management. Funding for this project will mainly be met from national sources but with additional support from the World Food Programme supported by UNDP and SIDA. This project will be implemented by the Soil Conservation Division of the Ministry of Agriculture.

19. In spite of the concerted national effort which has been indicated, desertification is still gaining ground in Tunisia whether one thinks of rangelands, rainfed croplands, irrigated lands, and forested or wooded areas. To be able to reverse the process, even more massive funding will be required. But the country has resolved to make a serious start in dealing with this major environmental problem which has repercussions for food production and other sectors of the national economy.

B. The Sahel subregion (West Africa)

20. The problem of drought and desertification in the Sahel area of West Africa is probably the best documented throughout Africa. In this subregion, there are two different units, one of which is more affected than the other. The most severely affected countries include Burkina Faso, Cape Verde, Senegal, the Gambia, Mauritania, Mali, the Niger and Chad. The rest of the countries in the subregion are only partially desertified because large parts of their territories lie within the humid zone of West Africa. These include Guinea, Guinea-Bissau, Benin, Nigeria and Cameroon. The first nine countries were the

worst sufferers in the Sahelian drought of 1968-1873, and their plight drew world attention to the twin problem of drought and desertification. In this section of the report, most attention will be focused on the nine Sahelian countries, provided it is remembered that the others, like Nigeria and the other four, equally experience it on some moderate scale and only in parts of the territory.

Senegal

21. Senegal is yet another of the true Sahelian countries that have been plagued by a series of droughts starting from 1968, and a beneficiary of the series of aid projects under the Sudano-Sahelian institutions like CILSS, UNSO, AGRHYMET. With a population of nearly 7 million, the human pressure on the land is manifested in many forms. Desertification indicators affecting rangelands, rainfed and irrigated croplands, are all positive. The spread of sand dunes on to agricultural land is very much in evidence, as is acute fuelwood shortage resulting from widespread clearing of woodlands near urban centres, and forests in the more humid parts of the country. As a member of CILSS and UNSO, Senegal has benefitted at the national level in working out a national programme to combat drought effects and desertification.

22. As a primarily agricultural and pastoralist country, one of the major problems Senegal is facing is the widespread sedentarization of nomadic pastoralists in ecologically fragile rangelands because of the curtailment of former transhumance grounds which lie beyond national borders. This is particularly evident in areas where there are natural sources of water, as well as in areas where new boreholes have been established. Thus the provision of watering points adds to the desertification problems by encouraging overgrazing. In the case of agricultural populations, it is possible to observe increased settlement in lands formerly used by pastoralists, and the ensuing conflicts are responsible for the exacerbation of the effects of drought and desertification.

23. Even before UNCOD, Senegal became a member of several co-operative efforts in the subregion, on environmental conservation and natural resources development. These include the Inter-African Committee for Hydraulic Studies (CIEH), the Organization for the Development of the Senegal River (OMVS) jointly with Mali and Mauritania, and the Senegambia Secretariat jointly with the Gambia. These institutions add to CILSS, UNSO and AGRHYMET to produce a balance of efforts at environmental conservation, the tools necessary for dealing with droughts and controlling desertification.

24. The list of anti-desertification projects currently being carried out in Senegal includes 13 items financed by such various agencies as FAO, UNSO and WFP. There are other projects funded on a bilateral basis as well as those by non-governmental organizations but these were not readily available for the purposes of this report. The array of projects covers wide areas of concern in the endeavour to deal with drought and desertification. They include forestry training and communal afforestation projects, a conference on anti-desertification policy formulation, a UNSO-sponsored centre for eco-system monitoring, several projects devoted to fuelwood and alternative energy development, sand dune fixation, and a project on the conservation and development of natural vegetation.

This last project is also the most extended and it employs the method of food-for-work. It is funded by the World Food Programme, and it is intended to conserve and develop natural vegetation by involving large numbers of rural peoples. In the same breath, efforts are being made to encourage the development of village woodlots to relieve human pressure on the natural wood fuel resources. All these programmes should go some way in dealing with the drought and desertification problem. Unfortunately, the indications are that the projects are not massive enough, considering the degree of land degradation that has taken place from the combined onslaught of drought and desertification.

25. In addition to the purely national projects, Senegal is participating actively in the trans-Sahelian programmes such as the Sahel greenbelt and when it is fully funded, co-ordination of its national programmes with those of its neighbours.

C. The Eastern African Sahel lands

26. From the climatic point of view, the Sahel lands of Eastern Africa incorporating Djibouti, Ethiopia, Kenya, Somalia, the Sudan and Uganda should be put together with the Sudano-Sahelian lands. However, for the purpose of this report, they will just be referred to as the Eastern African subregion. During the recent Sahelian droughts, these countries experienced severe problems, though varying in degree from one country to the next, very similar to those in West Africa. In some instances, drought disrupted food production programmes so severely that some countries had to resort to emergency aid. The countries most severely hit were Ethiopia, Djibouti and Somalia. Added to the drought problem and partly caused by it was warfare in part of the subregion which produced large numbers of refugees, particularly in Somalia which had to be fed at the height of the droughts. Most of these countries had qualified for receiving financial assistance through UNSO, but in 1986, they formed the Intergovernmental Authority on Drought and Development to help co-ordinate their activities in drought management and desertification control.

Somalia

27. Somalia is easily more arid than Kenya, and has suffered much more severely from the effects of drought in the last 20 years. Desertification problems have in the near past been further complicated by having to cater for nearly one million refugees who were fleeing from the Ogaden war. It is estimated that from 60 to 70 per cent of the total population is pastoral and nomadic at the same time. The country has a few important irrigation schemes located along the main river valleys, namely the Juba and Wabe Shebelli. The main exports have been livestock and livestock products chiefly aimed at the Gulf States. The severity of the droughts and the accompanying famines in the last two decades have underlined the seriousness of desertification in the country.

28. In terms of desertification indicators, Somalia is fairly representative of countries in the Horn of Africa. Sand dune encroachment is moderate and

is confined to several coastal sites. The deterioration of rangelands is moderate, but much more in evidence during the series of prolonged droughts. Rangeland deterioration is also very much in evidence around the water holes and permanent water points which have been constructed in the livestock-rearing districts. The limited areas of cropland have suffered much deterioration and this has been expressed in the shortage of cereals arising from poor yields. With a growing population now standing at over 5.5 million, the threat to agricultural lands is increasing and human settlements encroach into more and more arid lands. The irrigated lands along the river valleys are at least providing a partial solution, but they in turn are affected by soil salinization which could lead to abandonment. One of the biggest problems facing Somalia is a fuelwood crisis arising from the wholesale clearance of the limited forest areas and woodland, partly to give room for agriculture and partly to supply the fuelwood requirements of both the urban and rural populations. The new irrigated areas were formerly under forest, and these were cleared to provide room for irrigation. The country faces a critical shortage of water and during the last severe drought an emergency water development and supply programme mounted by the United Nations Department of Technical Co-operation for Development (DTCD) had to be put into operation. The potential of aquifers for solving the water problem is yet to be exploited, and is likely to be a focus of anti-desertification assistance projects.

29. Somalia, like Kenya, is one of the countries of the IGADD group of countries which are likely to benefit from the co-ordination of national and subregional efforts to combat drought and desertification. The IGADD strategy for dealing with drought and desertification has been divided into (i) emergency measures and (ii) development strategies to combat drought. The emergency measures are only employed during severe droughts such as have been experienced in Somalia, and they include the mobilization and distribution of food, medicine and other relief assistance, the mobilization of logistic support, and the provision of water supply for human and livestock consumption. The development strategies to combat drought are very comprehensive and have been divided into:

(a) Short-term measures, such as the measures for the establishment of a subregional early warning system, the establishment and strengthening of national drought-coping organs, food buffer stocks, collection and dissemination of information, reafforestation programme, grassland development and setting up of an inventory of completed projects;

(b) Medium-term measures are concentrated around the study and development of water resources, rehabilitation of agricultural land, soil and water conservation, livestock development, development and management of rangelands, and afforestation and reafforestation. They also include research into drought-resistant crops, land-use planning and infrastructural development;

(c) Long-term measures, including rehabilitation of degraded agricultural lands, infrastructure, sedentarzation and settlement policies, and the development of self-sufficiency in food production.

30. At the national level, Somalia has already set up an institution and prepared a national programme for desertification control. The National Range Agency was established and given the responsibility for co-ordination and implementing effective programmes for drought and desertification control and rangeland rehabilitation. An Anti-desertification Unit has been created within the Agency and is responsible for several programmes which have been put into operation following funding from various sources, such as UNSO. Some of the UNSO-funded projects include the preparation of the national action plan for combating desertification, coastal sand dune fixation, the utilization of wind energy, afforestation and environmental monitoring. The UNEP list of desertification control and dryland development projects in Somalia include the following:

(a) FAO-funded assistance in development planning aimed at improving soil survey and mapping, land suitability evaluation, and manpower training: the area of remote sensing;

(b) FAO-funded assistance in range ecology and management;

(c) FAO-funded project in fodder production and conservation;

(d) FAO-funded project in strengthening agricultural research;

(e) FAO-funded project in strengthening of the Agricultural Research Centre. This is also the largest single project and it is aimed at assisting the country to attain the status of self-sufficiency in food production;

(f) DTCD: Emergency water relief during the 1984 drought;

(g) UNSO-funded project on the rehabilitation of rural reservoirs.

Many of these projects have come as a result of the close collaboration between the National Range Agency and the various United Nations agencies which are committed to the implementation of the Plan of Action to Combat Desertification. It is expected that the establishment of IGADD will assist with proper project identification and a more determined IGADD effort to combat drought and desertification.

D. The SADCC countries of Southern Africa

31. The SADCC member States include Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, the United Republic of Tanzania, Zambia and Zimbabwe. SADCC does not have the same objectives as CILSS or IGADD but in the last 10 years, a series of bad droughts have brought the attention of the member States of this organization to study carefully the recommendations of UNCOD and especially the Plan of Action, and to adopt most of the strategies suggested, because the environmental issues addressed are virtually the same. Of the nine member States of SADCC, the United Republic of Tanzania has some badly degraded rangelands in several districts in the centre and in the north; Zimbabwe has some semi-arid portions and has recently been plagued by a series

of bad droughts; Botswana is almost all semi-arid to arid; Lesotho faces severe problems of soil erosion and the degradation of rangelands; Angola has some semi-arid portions close to its borders with Namibia; and Mozambique has been plagued by a series of bad droughts which have been exacerbated by war.

32. The primary objective of the SADCC organization is to be self-sufficient in food production and to lessen economic dependence on South Africa. As already indicated, environmental considerations will play a decisive part in this equation. The SADCC member States are very much aware of the fact that efforts to achieve regional food security will depend to a large extent on the wise and long-term conservation of their natural resource base. To this extent frequent droughts, massive soil erosion and general environmental degradation which are indicators of desertification are a clear enemy of their plans. They have therefore opted for sound environmental and natural resource management. The management strategies to be adopted will include conservation, utilization and environmental monitoring.

33. Some of the environmental and natural resource conservation strategies which are being used by SADCC member States include reafforestation, the establishment of village woodlots, conservation of soil areas previously eroded, and the protection of rangelands from the devastating effects of overgrazing. The series of listed environmental priority concerns and their requirements for conservation is very close to the anti-desertification issues expressed at UNCOD, and include the following:

(a) Accelerated soil erosion and degradation;

(b) Overgrazing;

(c) Desertification;

(d) Climatic variation and periodic drought;

(e) Deforestation and inadequate afforestation and reafforestation;

(e) Inadequate trained personnel;

(f) Lack of information and awareness, and lack of environmental education programmes.

34. Among the recommended strategies include improved land management practices, de-stocking, prevention of soil degradation and soil improvement, increased afforestation, maintenance of the habitats of the utilized species, formulation and implementation of national conservation strategies, implementation of practical measures to check the advance of the Kalahari Desert, and control of rapid increase of human population. To this extent, they have prepared sectoral strategies to be implemented in each member State of SADCC. A series of projects have been prepared and some are already funded. At least one of the countries of the subregion has requested assistance from UNSO and in 1986 a UNSO planning and programming mission visited the country.

It is expected that the United Republic of Tanzania will henceforth be one of the 21 countries receiving aid from UNSO for its anti-desertification activities.

35. Food security projects, some of which have already been funded, include the regional early warning system for food security, regional information system, regional food reserve, regional post-production food loss reduction and food processing, regional seed production and supply, improved irrigation in the SADCC subregion and strengthening and co-ordination of migrant pest control. It is therefore fair to conclude that the SADCC subregion stands to gain a lot by working closely with those countries which are interested in the implementation of the Plan of Action to Combat Desertification.

36. It is on record that the Governing Council of UNEP was in 1984 requested to explore the possibility of assisting the SADCC countries through the establishment within available resources of joint ventures along the lines of UNSO for assistance in combating desertification. Therefore, in so far as the SADCC programmes have been strengthened they should now be considered as part of the team participating in the implementation of the Plan of Action. Although the SADCC countries kept on pressing to be included in the group of countries benefitting from UNSO, a strong feeling has emerged that UNSO should not be required to over-reach itself by taking in another nine member States. If this were to happen, UNSO might cease to function as an effective organization for the control of drought and desertification in Sahelian Africa. The end result has been efforts to direct some aid to the SADCC countries without formally admitting all of them into UNSO.

IV. RECOMMENDATIONS

37. There are numerous areas of recommendations for action at the national, subregional, regional and international levels. The role of ECA is pivotal in all these. For example, it is recommended that ECA should play active roles in supporting member States in the formulation of their national plans to manage drought and combat desertification, supporting member States with the preparation of anti-drought and anti-desertification projects, to encourage and co-ordinate national, subregional and regional early warning systems, to assist member States in effectively using the newly established African Centre of Meteorological Applications for Development (ACMAD), to stimulate further co-operation in intergovernmental institutions that are relevant to drought management, monitoring of resources, and desertification control.

38. Recommendations to national governments include the establishment of effective national early warning systems, establishment of ecological monitoring and assessment institutions, attention to the land tenure and land-use issue, concentration on improved agricultural and food production policies, attention to developments at the grass-roots levels, and the need for more enlightened population, settlement, and resettlement policies, attention to appropriate and adequate training at all levels, and the establishment of elaborate plans for the rehabilitation of degraded eco-systems.

39. Recommendations for action at the international level include funding and equipping national and regional early warning systems, support for and establishment of regional institutions, support with food relief and food relief planning; and the provision of financial assistance to countries afflicted by drought and desertification.

40. The recommendations made in this report are based on clear understandings that:

(a) More droughts will occur, if not immediately, but certainly within the immediate economic planning periods in each of the affected member States of ECA;

(b) Even if, climatically speaking, much of Africa were to experience a wet phase of from five to ten years, or even longer, droughts will return, and drought and desertification must continue to be given priority on the national economic planning agendas;

(c) In the event of a break, ECA member States should take the opportunity to put medium- and long-term measures into operation;

(d) Anti-drought and anti-desertification strategies and programmes are not amenable to crash programmes, and even within APPER and the UN-PAAERD in view any recommendations will aim more at the medium- and long-term prospects of achievement, rather than the short-term results;

(e) The overall aim of meaningful recommendations should be to strengthen national preparedness, subregional co-operation and regional co-ordination of programmes and strategies;

(f) Rather than look for entirely new ideas, action programmes at all levels should continue to be guided by the UNCOD Plan of Action to Combat Desertification, and that in addition, one should now look for and utilize relevant experiences of member States with combating the effects of drought and desertification over the last 10 or more years;

(g) Efforts should concentrate on finding out what obstacles have been encountered in the application of scientific and technical knowledge first at the grass-roots level, followed by the national, subregional, regional and international levels.

A. Recommendations for action at the national level

41. In the final analysis, anti-drought and anti-desertification programmes must be located and must be seen to be working at the national level. The recommendations for action at the national level assume that a national body will still be needed to be charged with co-ordinating the preparation of national plan of action to manage the effects of drought and to combat desertification, and to be responsible for its continuous revision in the light of new knowledge. Against this background, the following national action programmes are recommended:

(a) The establishment and effective utilization of a national drought early warning system, and where they already exist, to strengthen or remodel them to turn them into instruments of policy and decision making. Alongside each national early warning system there should also be established a national early warning contingency planning committee, with powers to recommend on the basis of meteorological, climatological or other information;

(b) Where this does not exist at the national level, there should be established a national crop and rangeland ecological monitoring agency or department with capacities for crop forecasts, rangeland monitoring, and desertification mapping, and that this outfit should work in close collaboration with the national early warning system. The agency or department should be equipped with aircraft and satellite-based remote sensing capacity to provide national intelligence on food production, rangeland condition and desertification processes;

(c) Studies, where they do not exist, be carried out to determine correct land-use practices in all ecological zones, particularly those liable to frequent droughts and desertification, and that national land use maps be produced to guide management decisions. It was also recommended that each member State endeavour to establish easily defined land tenure systems and to use them as a basis for land-use regulations in the interest of managing droughts and controlling desertification;

(d) In addition to the necessary emphasis on the application of science and technology, research be continued at the national and local levels, on the best methodologies of sand-dune fixation, proven drought-resistant species of trees and grasses as well as other management strategies;

(e) The government should do everything at the national level to arrive at viable and forward-looking food production and agricultural policies which will at the same time help combat drought and desertification. Agricultural development policies should aim at expanding the cultivated area on sound ecological principles of sustainability; they should employ new technologies such as improved seeds, fertilizers and pesticides and they should make good use of human resources and capital. Also relevant to food and agricultural policies should be the introduction of national crop insurance schemes supported by government or commercial banks, reduction of post-harvest losses, as well as the building of strategic food stocks to guard against famines caused by drought;

(f) When projects to combat drought and desertification are taken to the grass-roots levels; there should be an all-out effort to involve the local people, including the women and children who play an important part in agriculture and food production;

(g) It is desirable that at the local level every effort be made to adopt enlightened population policies. At the same time, governments should adopt equally enlightened settlement and resettlement policies for population inhibiting degraded lands which can only be reclaimed through evacuation;

(h) Efforts should be made to pay adequate attention to the needs of the human populations living in areas prone to drought and desertification; such efforts should include training at all levels with a view to providing them with specialized training and improved health and nutrition to prepare them for combating drought and desertification. Manpower training at the national level should be broad but relevant and should include the following areas:

(i) training of extension workers;

(ii) training of technologists and technicians for work in various aspects of drought and desertification;

(iii) university training in natural resources and other fields relevant to desertification control.

There should also be training for farmers and pastoralists through short courses and field days on methods of combating drought and desertification. At the same time, the trainers should be encouraged to learn from the farmers and pastoralists about traditional drought-coping techniques;

(i) Concerted efforts should be made to strengthen the institutional and management capacity of desertification control programme at the national level through:

(i) institutions for co-ordinated agrarian reforming accompanied by the decentralization of anti-desertification programmes, so that decision making is at the problem level rather than in a centralized bureaucracy;

(ii) reform of policies and institutions in the rural areas to make them more sensitive to the needs of the local population;

(iii) insistence on popular participation for all levels of society and especially the grass-roots levels;

(iv) involving women and children in all anti-desertification activities;

(j) More efforts should be made at the national levels to produce and disseminate information aimed at creating an even greater awareness of the requirements for drought management and desertification control;

(k) The rehabilitation of lands ravaged by drought or degraded to the point of desertification is a serious national responsibility. Many countries in the drought-prone lands have already undergone considerable damage to their eco-systems and find themselves unable to reverse the trends without massive programmes or rehabilitation and management. For such affected countries in Africa, schemes be worked out, at the national level, for slowing down the process of desertification and appropriately responding to drought in suitable localities through some of the following activities:

(i) policies for soil conservation and the restoration of degraded rangelands at the national level;

(ii) afforestation and reafforestation programmes;

(iii) stabilization of sand dunes;

(l) In addition to the short- and medium-term measures, efforts should be made at the national level to carry out long-term rehabilitation projects which may require up to 20 years to be fully realized; as such, they must be incorporated in national development plans and implemented in an incremental way over the years. The programmes should include better efforts to understand the role of climate in drought and desertification, and the role of human activities in contributing to or creating the deserts. At the national level, some of the problems identified will be tackled in the following ways:

(i) agricultural and range management research sensitive to the needs to control environmental degradation and desertification control, and aimed at achieving national self-reliance in food production;

(ii) long-term manpower training in methods of combating drought and desertification;

(iii) strengthening national institutions and their management capacities;

(iv) long-term efforts to restore the denuded lands and reclaim desertified areas;

(v) long-term ecological monitoring to better understand the cyclic behaviour of droughts.

2. Recommendations for action at the subregional levels

42. The subregional measures are aimed at collective self-reliance, in such areas as crop forecasting, subregional food security programmes, trans-boundary food transfers, and trans-boundary anti-desertification project. In these endeavours use should fully be made of existing subregional institutions like CILSS, IGADD and SADCC. It is recommended that a network of existing sub-regional institutions be developed for the exchange of information on strategies for combating drought and desertification, and at the subregional level areas which lend themselves to co-operation include the following:

(a) Co-operation among national early warning units to utilize to the full any subregional patterns of drought which may emerge. These should include pooling of efforts and exchanging information among climatological trends;

(b) The building of multinational or subregional food reserves as is already being done by SADCC;

(c) Subregional drought-coping strategies like the setting up of emergency food fund to inculcate subregional self-reliance;

(d) The identification of projects of subregional interest to the member States and to assist in securing resources for project preparation and implementation;

(e) Assistance to member States in a subregion in setting up guidelines and action programmes for drought and desertification as well as following up the implementation of drought-related activities of subregional interest.

3. Recommendations for action at the regional level

43. Action at the regional level should be initiated by ECA and where possible politically supported by OAU. At this level there is already an array of activities and institutions which are in operation, or which have recently been established, and these should be used to their fullest extent to ensure co-ordinated and meaningful action programmes to manage droughts and to combat desertification. The Lagos Plan of Action had underlined the necessity for African countries to use their natural resources to achieve sustainable economic development. Five years later it was admitted that among the many factors which had hindered the realization of the African aspirations contained in that Plan was the recent experience of severe and persistent drought and the accelerations of the desertification process. Therefore among the recommendations for action at the regional level should be concerted efforts to deal a severe blow to drought by learning to manage it and to desertification by the determination and resolve to make a dent on it. This must be achieved by using the existing regional and subregional institutions like CILSS, AGRHYMET, the Institut du Sahel, the Regional Centre for Services in Surveying, Mapping and Remote Sensing (RCSSMRS), the MULPOCs, PTA, ACMAD, IGADD and SADCC institutions. The array of institutions is impressive and of the most important contribution which the UN-PAAERD should make to the region should be to strengthen these institutions and to make them truly serve Africa. It is strongly recommended at this general level that in the event of there being substantial new funds for African economic recovery from the UN-PAAERD, an important proposition of these funds should be used to strengthen these institutions and to make them truly functional in dealing with the management of drought and the control of desertification. After these general recommendations, it is possible to go to the more specific recommendations.

44. National food policies and food and agricultural strategies are crucial for the management of drought and the control of desertification. Actions at the national and subregional levels need support and back-stopping at the regional level. Correct policies which promote self-sufficiency and self-reliance in food production are one of the strongest weapons in drought management and desertification control. It is therefore recommended that ECA should help co-ordinate the required studies for the establishment of national and subregional food self-sufficiency programmes, as well as the building of buffer stocks to minimize the effects of drought and desertification.

4. Actions at the international level

45. All actions at the international level should aim at supporting those already being taken at the national, subregional and regional levels. They should be geared towards the strengthening and co-ordination among donor countries and institutions including intergovernmental and non-governmental groups. Secondly, these should aim at providing technical and financial support to African countries either individually or through subregional and regional emergency or traditional support mechanisms. It is recommended that international assistance should concern itself with some of the following areas of activity:

(a) The establishment and strengthening of early warning systems through the provision of equipment and the training of skilled personnel;

(b) The establishment of regional institutions or the support of old ones with a mission to manage drought and combat desertification;

(c) The establishment and/or strengthening of mechanisms set up at national or subregional levels for food-relief planning, management and co-ordination;

(d) The replenishment of emergency reserves of food grains, medical suppliers and essential inputs for countries suffering from drought and famine.

46. Africa can only move at the pace hoped for in APPER and the UN-PAAERD if resources of sufficient magnitude are made available by the international donor community. It is recommended that the international, multilateral, bilateral and other donors give financial support to national, subregional and regional organizations to enable them to achieve a measure of self-sufficiency in coping with emergencies and in meaningfully addressing the timely issues of drought and desertification.

47. It is further recommended that the provision of financial assistance to the African countries affected by drought and desertification by the international donor community should be properly targeted to achieve results and should be substantial enough to begin to address the problems for which they are intended.